HUMAN ORGANIZATION

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THE SOCIETY FOR APPLIED ANTHROPOLOGY

The Society for Applied Anthropology was incorporated as a scientific society in 1941 under the laws of the Commonwealth of Massachusetts. Its primary object is "the promotion of scientific investigation of the principles controlling the relations of human beings to one another, and the encouragement of the wide application of these principles to practical problems."

Meetings

The Society holds its own annual meetings as well as meetings held in conjunction with other scientific societies. The Society's meetings are so organized as to provide wide opportunity for discussion as well as for the reporting of research findings.

Publications

Human Organization, a quarterly journal, is published by the Society. Subscription is by membership in the Society. Annual dues for the three classes of membership are: Active: $8.00; Subscribing: $8.00; Student: $4.00.

INFORMATION FOR AUTHORS: Type manuscripts on one side of 8½ x 11 inch paper using a 60-space line and doublespacing all material. Type footnotes, doublespaced, on a separate sheet. Include "footnote material" in the text wherever possible. Manuscripts should be prepared in conformity with the general style of *Human Organization.* Retain a carbon copy of manuscript for use should originals be lost in the mails.

All correspondence and manuscripts should be sent to The Society for Applied Anthropology, New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York. Copyright 1961 by The Society for Applied Anthropology.

Qualifications for Membership

Active membership is limited to those who have professional training at the graduate level, or its equivalent in publications or experience in any of the fields of applied anthropology. Active members have all the privileges and obligations of membership. Applicants are asked to give the names of two active members as reference; or, if this is not possible, the applicant may write to the Administrative Secretary concerning his qualifications. The Secretary will then see that his application is acted upon.

Subscribing membership is open to anyone interested in applied anthropology. Subscribing members have all the privileges of membership except the right to vote and hold office.

Student membership is open to students currently registered in a college or university. They are asked to provide the name of the institution and the name of one of their instructors.

Editorial

Five-Year Report

As the out-going editor writes a final editorial, we cannot help but look back upon the five-year experience with some satisfaction. There are many ways in which the Society and *Human Organization* can be strengthened, but we can point to some evidences of progress.

Membership has grown by approximately 90 percent. We have caught up with our publication dates and are now printing substantially more material than in the preceding five years. We began the term owing a good deal more money than we had in the bank. We end with a solid surplus.

Our aim, in this final report, is to explain as best we can how these gains have come about.

1. University Support

Up to 1956 the Society had no university support. With Cornell's New York State School of Industrial and Labor Relations providing us a home, we gained important advantages. The saving in rent and local telephone charges and the free use of the editor's secretary for *Human Organization* correspondence, together with other incidental aids, add up to an impressive contribution of the School toward the revitalization of the Society.

A university home base also provided a friendly environment for the Managing Editor to carry on her work—contrasting with the isolation of a rented office for a full-time staff limited to one person.

We found also that faculty wives are among the most important resources a university community can offer. When the children reach a certain point in school, many of these women come on the job market. If you find the right one—and all of ours seem to have been right so far—you get high ability and also dedication to the task. While Marian Tolles deserves a special tribute for combining so efficiently the business and editorial duties over more than half of our term, all of our wives have served us well.

2. Business Methods

The editor had no previous experience in business methods of any sort, let alone the special methods applicable to a professional society. Max Furman, a lawyer and C.P.A., volunteered to set up our accounting and record-keeping system for us. The system he devised has proved to be both simple and accurate and involves a minimum of paper work. Max also audited our books each year, and it is only during the last year that we have been able to persuade him to accept any compensation in return for his essential services.

3. Member Involvement

We assumed that if we could get more members doing more things for the Society, the Society would grow stronger. This process began with the Editorial Board, which has been a hard-working group. Its members have not only responded with thoughtful criticisms to manuscripts sent them; they have also taken the initiative in finding good manuscripts to send in or in suggesting topics for articles and people to write them. Such contributions were particularly important in the early months when we had practically no publishable manuscripts on hand and when the unstimulated flow of articles was not fast enough to fill four issues a year—let alone an accelerated publication schedule to enable us to catch up.

The further responsibilities assumed by members can best be described under the heading of special projects.

4. Expert Advice

The activities noted above all contributed to making our business operations more efficient and to improving the quality of the journal, but they did not directly bring in money that was desperately needed. In the natural course of events, such efforts might have paid off eventually in increased membership but we could not afford to wait for gradual improvement.

In the early months, we consulted Vernon Eagle, Executive Director of the New World Foundation. He referred us to Donald H. Miller, Jr., General Manager of the *Scientific American,* whom he credited with the guidance that put the *Bulletin of the Atomic Scientists* on its feet. Mr. Miller gave us advice along these lines:

1. Don't dissipate your energy in seeking advertising for the journal. For the rates you have to charge with your small circulation, this is small potatoes.

2. Don't count on receiving any general support from a foundation. Foundations naturally shy away from insolvent publications, fearing that one grant will lead to expectations of continuing subsidy.

3. Concentrate on special projects. If you have a project that happens to fall in the field of interest of a certain foundation, that foundation may feel it can support that particular project without thereby becoming obligated for general subsidy support.

5. Special Projects

Special projects provided the main key to our progress. We found we could put out a special issue and get it paid for, more or less, three times over. One source would be membership dues, since we are obligated to give the members four issues a year, whether or not we call any of them special issues. The second source would be a grant from a foundation interested in the topic of the special issue. The third source would be promotional activities bringing in sales of the special issue and new memberships. We assumed that a promotional piece describing the Society and *Human Organization* in general terms would not be very effective, and therefore our mailings have emphasized something "special" we were doing.

A special issue may be effective in bringing in new members with a particular interest in the topic covered, and yet clearly there are hazards in this approach. Too great a frequency of special issues would deprive many members of the range of topics they look forward to in our journal. Furthermore, a steady diet of special issues would have presented tremendous editorial problems. Each such issue requires an editor especially qualified in the field to be covered and solicitation of articles from those he thinks best able to deal with that field. The editor must then set a deadline for all the contributions, but he can be almost certain that one or more of his authors will not meet the deadline. Then what? If you publish only special issues, then you are really stuck. If one out of every four or five issues is a special, as has been our policy, then the deadline problem becomes less serious. If the special issue is not ready when you hope, you simply go ahead with the regular issue. We waited more than a year beyond the original deadline for one of our specials—and it was well worth waiting for.

While all of our special issues have helped us financially—and, we hope, have made membership more attractive—two of them, in different ways, have made a special contribution. Our first, "Human Problems of U.S. Enterprise in Latin America," by Allan Holmberg and W. F. Whyte brought in a flood of cash (from bulk sales to industry) just when we desperately needed money. The gain in membership (around 100) was dwarfed by the immediate and continuing income from the project. Our final special issue, Horace Miner's "Social Science in Action in Sub-Saharan Africa" brought in only a moderate income from sales but returned 200 new members from a mailing to the American Anthropological Association and more than another 200 from a mailing to the American Sociological Association (this mailing combined with an advertisement for the Deutsch monograph).

In 1959 we launched our monograph series. The program had both a professional and a commercial rationale. There are many worthwhile manuscripts that do not get into print because of space problems: too long for an article, too short for a book. If we could publish one or more such monographs a year and give the monographs free to our members, we hoped that this would make the Society increasingly attractive to potential members. If we could raise outside funds covering a substantial part of our costs, promotional activities would bring in enough sales and new members to make the venture financially sound. So far our initial estimates of the possibilities of this program have proved too conservative.

1960 marked the appearance of the Adams-Preiss book, *Human Organization Research,* which had been planned in 1957. Continuing royalties to the Society from the book further strengthen our financial position.

Perhaps this report concentrates excessively on commercial matters. We would like to believe that the growing membership is a response to the quality of our publications, but that we cannot measure, and each member or prospective member must evaluate it for himself. We believe that the Society for Applied Anthropology has an important mission to play in the world today, and our aim has been to build up the organization and procedures and financial strength that will enable the Society to play that role with increasing effectiveness in the future.

The Society is fortunate in having secured Robert J. Smith of Cornell's Department of Sociology and Anthropology as editor for the next five years. We don't wish to commit him to our policies. The freedom of the editor to set his own course has been one of the strengths of the Society. We look forward to a different journal—and a better journal—under his leadership.

Human Relations at the Management Level in a Bureaucratic System of Organization

Michel Crozier*

Comprehensive studies of human relations problems at the management level are usually hampered by two sets of difficulties: first, the complexity of the role structure in modern organizations accounts for a lot of ambiguity and overlapping, making it impossible to match really comparable cases and to use rigorous methods in a meaningful way; second, the general emphasis on status and promotions gives crucial importance to the human relations game and prevents the researcher, therefore, from obtaining reliable data on the central problem of power relationships.

The research we are going to report on provides an interesting situation on both accounts because of, on one side, the very unusual simplicity of the organizational setup and the clear-cut definition of the roles we studied, and, on the other, the general de-emphasis on promotions and the concomitant lack of power cliques cutting across functional and hierarchical lines.

Such a blueprint may have its disadvantages, but it gives the social scientist a very good vantage point from which to try to understand the basic organizational givens which characterize human relations at the management level. It is, however, a sort of limit case and care should be taken to understand it in the proper way; that is, not as a starting point for easy generalizations, but as a more simple example where the relevant variables can be observed in a clearer form.

The field studied is a large-scale multi-plant industrial organization operated by the French State under civil service regulations. The study of human relations at the management level was part of a larger research project whose aim was to understand the general functioning of a bureaucratic organization and the impact of bureaucratic rules on the attitudes and behavior of people at the shop and at the management level. Data on the managers' attitudes and behavior were obtained through two successive processes: first, considerable direct and indirect information was gathered during an intensive study of three plants where the personnel was systematically interviewed according to elaborate fixed schedules, and where the results of the survey were fed back to the managers as well as to the supervisors and to the representatives of the workers; second, in twenty out of the thirty plants of the organization, the members of the management teams were interviewed also with fixed schedules but with more open questions.

All plants of the organization are run with exactly the same rules and the same very clear hierarchical roles. They are relatively small-size industrial plants dispersed throughout France, and employing from 350 to 500 workers in machine-operating, common labor and service jobs with a rather simple and stable technology. The buildings are usually quite old but production machines are modern; general equipment, however, such as conveyors, raw material processing

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The author wishes to express his gratitude to Miss Colette Eichisky who was a most efficient assistant during the research and, for analyzing results, to Miss Miriam Gallagher who gave her warm and skillful help in editing this article in English; also to his colleagues at the Center whose valuable comments enriched a previously too narrow experience.

systems, air conditioning, and sanitary devices are very often lagging behind. For the managers, problems in the organization of the plant concern the preparation and processing of the raw material, for which new types of equipment are looked for, transportation and the flow of work which must be better standardized and mechanized, the rationalization of maintenance and best utilization of machines and equipment in view of the maintenance difficulties. By far the greatest organization worry of the managers, however, is the allocation of jobs and the shifting of workers whenever any kind of change takes place, since no transfer of any worker in any circumstance can contravene the strict seniority provisions of a general national code won over fifty years ago by the unions.

Production workers, two-thirds women, have complete tenure, but no possibilities of promotion. They get fair wages and are protected by a very elaborate seniority code. They showed in the interviews a rather happy pattern of adjustment to the bureaucratic system, but a very demanding kind of relationship with the managers and a strong set of values in opposition to management goals.

Lower supervisors, no more than a dozen in each plant, are recruited by competitive examination. The older ones are usually ex-noncommissioned officers. The younger ones are better educated and more productivity oriented. Their wages are rather poor and their status is low. They are stripped of all direct authority and reduced in fact to a timekeeper and accounting job. They have, in consequence, a very poor morale and seem to adjust reasonably well only if they resign themselves to accepting the workers' values.

There is in the shops still another group, the maintenance workers: in the whole plant, forty to fifty highly skilled people of various trades recruited through difficult competitive occupational tests. They are well paid, at least when they have enough seniority, and very often get more than the supervisors. The younger ones, however, get significantly less than they would get in high-paying wage areas in private industry. Most of the maintenance workers are mechanics, each one of whom is in charge of all maintenance and repair of the three machines he is personally responsible for. They have generally a very happy but also very aggressive kind of adjustment corresponding to their favorable but illegitimate power situation in the shop. Responsible for coping with the only event which breaks a detailed world of rules—machine breakdown—they are the real authority at the shop level but arouse bitter antagonism among the supervisors and a lot of frustration and some rebellion among the workers.

Finally, over the helpless supervisors and the aggressive and hostile maintenance men, there is the authority of the members of the management team. This centralization of authority focuses the attention of the workers on management, but does not help the managers in getting their will done at the shop level. Managers, as a matter of fact, do not have much organization leeway. They can resist workers' demands, but do not have much possibility of initiating action.

More will be said about the human problems within the shop when we discuss the situation and responsibilities of the members of the management team. But, before, we proceed, it seems necessary to provide somewhat more detailed background about the management group.

The Career Patterns of the Four Members of the Management Team

The management team consists of four members, one director in charge of general coordination, planning and sales,[1] one assistant director responsible for production, one technical engineer responsible for both machine and building maintenance, and one comptroller in charge of supplies, accounting, and personnel administration. The director and the assistant director are part of the same promotional ladder; they are both necessarily graduates of the École Polytechnique, the top theoretical engineering school in France, since by statute the organization can recruit its members of the "engineer corps" (their formal title) only among *polytechniciens*. The future director enters the organization at age 22 to 24; after two years of training at its private "application school" he will be appointed assistant director in one of the plants and, after twelve to fifteen years as assistant director, he will automatically be promoted to a directorship. Then he may later become a General Inspector[2] at the central office and may even be appointed Director-General. The comptroller must have a degree from a law school or a business school. He begins his career as a clerk and after many years will end it as a comptroller if he can get two promotions, which usually are given according to seniority. The technical engineer, finally, is a graduate of one of the minor engineering schools which do not have much prestige; he is appointed technical engineer after having passed a competitive examination and spent some months in training. Like his colleagues, the director, the assistant director, and the comptroller, he is a civil servant with complete tenure, but unlike them his career does not allow for any possibility of promotion; he will quit the organization and get his retirement pension without having had the chance to qualify for another job.

The director is a man of at least forty, usually in his late forties or early fifties, who has spent a good many years in the organization. His promotion has been entirely due to seniority, and the process of his selection may be seen, as a matter of fact, as working against the interests of the organization since at least half of the assistant directors in the past have quit before being promoted, and since the ones who stayed are likely to be those who were afraid they could not succeed elsewhere. On the other hand, the intellectual abilities and the early training of the director make him fit, or make him think he is fit, for a much more important job. This is a man, therefore, who tends to feel superior to his functions but has usually renounced looking for another job. He is not well paid by ordinary business standards, but he gets some tangible fringe benefits—among others, the free use of a large house, and of a car and a chauffeur. To these material perquisites, one should add the amount of independence he enjoys and the prestige his way of life still carries: he can use his own time very much as he sees fit; some of the directors pursue their

1. Sales is not a very important function since the organization does not deal with private dealers directly but with another public agency; sales problems involve only the planning of deliveries, stockage, and warehouse organization.

2. The General Inspector's job however, is not much sought after since it is not very rewarding financially.

own scientific or scholarly research; some have got permission to assume other administrative duties besides their own, usually as experts; some teach part time in higher institutions. In the past, at least some of the members of the "engineers' corps" have made minor but distinguished contributions in the field of arts and sciences, and generally the freedom of action and the gentlemanly status such a job brings its occupant remind one of the liberal professions in the late nineteenth century.

By contrast, in the plant the role of the director is small. Production goals are narrowly fixed by the central office. Processes are stable and change is extremely difficult. The director does not have the right either to hire or to fire; he does not have even the right to assign workers on jobs. The only people who are really dependent on him are the very weak supervisors' group, and his only chance of making his influence actually felt is to administer the rules in such a way as to diminish the constant squabbling their application brings, and, in that way, to inspire people with more positive attitudes toward production. The great majority of the directors interviewed considered, anyway, that production was mere routine and not interesting at all. Since sales is not a challenge either, the only problem which remains is new construction, remodeling of plant facilities, and general equipment and general planning of future development. Three-quarters of the directors interviewed gave priority to this aspect of their activity; no wonder that some of their critics accuse directors of "building mania"!

The assistant director is a younger man from twenty-five to forty who generally has had to choose a State career because of lack of business connections or because of personal shyness. In the past, graduates of Polytechnique were eager to seek employment in State organizations. Now they tend to choose State careers only as a last recourse.[3]

As a young man fresh from school and with no experience, the assistant director is eager to learn the job of industrial organization. He feels, moreover, that being put immediately in charge of the whole production of a plant is a splendid opportunity to get the experience he seeks and to get it quickly and without risks; he usually will be shifted from plant to plant two or three times, if not more, during his years as assistant director, and this will give him some challenge and some new experience. However, once he feels he has learned everything that can be learned from such a situation, a stage which comes more quickly than he had expected, he will become more and more interested in finding another job. The rate of departure has always been high, but seems now to be increasing still more inasmuch as the spread of economic development provides more and more opportunities for highly trained engineers. The rate is now well over sixty percent.

The comptroller is usually a man considerably past fifty, who has been promoted to the top rank in his own profession after a long wait. He is not likely to have been working a long time in this particular plant, and is not expected to remain long. He has with him younger administrative colleagues of the same "corps," who are impatient for turnover and over whom he has a limited influence. Officially he has important responsibilities; as a financial officer he has to post bond, but his job, in practice, is quite routine; and, but for one or two exceptions, the comptroller does not strike one as having the opportunity to make his personality count.

The technical engineer is alone of his sort in the plant,[4] which means that he has no other man of the same "corps" to talk to—an isolation which is more than trivial in such a small community. Maintenance of all general equipment, supervision of machines, maintenance and repair, discussion with outside contractors and supervision of their work, keep him constantly busy if not overworked; he feels his job is a challenging one but he knows he will always remain in a situation of subordination and this he resents. He may be younger or older, but there is a good chance that he will be much older than the assistant director and that he will have more seniority in the plant than all other members of the management team, since technical engineers are much less often shifted from one plant to another. His wages are fair but consistently lower than those of engineers with the same amount of responsibilities in private industry. He has no status compensation. Recruitment is therefore apparently becoming very difficult.

The relationship between these four men is governed by a number of detailed rules and statutes, but some ambiguity still remains. The director, of course, is clearly Number One man, but he is obliged to gather a "council" at least once a week and to listen to the advice of the other members of the team. This provision of an old statute is not really enforced now; a few directors make it a point never to hold council, while others hold them as matter of sound business practice rather than as compliance with the rule. There is, however, still a technicality involved in such an institution inasmuch as the technical engineers can participate only if they are especially appointed by the central office to be members of the council; all senior technical engineers are so appointed, but the younger ones are excluded.

The comptroller reports to the director, but, because of his financial accountability, he has to countersign the most important business transactions of the director and has, therefore, the apparent function of checking on him. Practically, there is no question as to his being a subordinate, and the checking is only perfunctory. The only consequence of this ambiguity is some uneasiness and frustration on the side of those comptrollers who think they are entitled to more authority. The assistant director has no direct relationship with the comptroller and there is no problem about determining who should be first. But there is some overlapping of functions and some difficulties in assessing the reciprocal situation of the assistant director and the technical engineer. Theoretically, the technical engineer reports to the assistant director, but this subordination, which is emphasized in the status difference, does not hold consistently in practice. The two men usually will argue on an equal and relatively free basis. Most assistant directors hold a supervisors' conference in their

3. Since Polytechnique is a military school, board and tuition are free; but the students have to reimburse the State for all the fees if they do not serve in the Army or in the Civil Service a minimum of ten years. Many private business firms will lend the man they hire the money necessary to repay the State, but this in itself may still raise problems.

4. Except for the few places where a junior technical engineer is made the assistant to a senior one.

own office two or three times a week; when they can obtain the agreement of the technical engineers they will ask them to attend, but technical engineers, when they do come, tend to act as observers and to avoid appearing as committed participants, a role which would mark their subordination.

Respective age and respective seniority finally are important aspects of the equilibrium of the team. Usually one will find the following combination: the comptroller is the older man, rather aloof in his administrative department where he deals with his own kind of people, not too much involved in the problems of the plant, where he is rather new, and where he does not expect to stay very long. The director will be somewhat younger but already a seasoned civil servant who is likely to have more seniority in the plant than the comptroller but much less than the technical engineer; he is expected to stay for some time and has the final responsibility for what is going on, which means that he has a direct and important commitment to the organization and to its people. The technical engineer's age-rank varies considerably, but, unless exceptional, he will have more seniority than any of the others, and, because of his kind of patchup job, will know more and be more competent about plant problems. The assistant director, by contrast, will appear new and inexperienced, and will not be likely to have a great commitment either to the people or to the organization.

Our brief description will already have made clear that such a situation presents some aspect of a sort of laboratory experiment for observing conflict within organizations. We deal with a very well delimited group in the experimental sense; there is no ambiguity about who belongs and who does not; its members are isolated, one might even say cut off, from the outside environment; they have no other persons to talk to among the rest of the staff, since there is an insurmountable gap between them and their subordinates.[5] They are also very far apart from people playing the same role of industrial manager in private organizations, as well as from people having comparable status in the civil service. Executives in private business view them as people with a kind of experience that is not relevant and cannot even be understood, and with whom, therefore, there is no common professional ground. Other civil servants of the same rank may have the same primary interest to defend against their common employer, the national state, and before the same suspicious general public, but the management group of the present study is made up of technicians with organizational responsibilities, a combination whose problems seem utterly peculiar.[6] One can safely assume, therefore, that if they are not in the laboratory vacuum, they are nevertheless much better insulated from outside influence than most people in contemporary natural professional situations. Finally, such a setup is duplicated thirty times, in identical terms, all over France.

To summarize these background elements, we have four players, separated from the rest of the world and obliged to play together. They do not have the same interests at stake, however, since some expect to quit the game (the assistant director) or can have professional satisfaction outside of it (the director). Finally, their cards (that is, their power) are different.

If our four players had the same stakes and commitments, and no difference in roles, we could work out the prediction of coalitions according to their respective power;[7] however, the much greater interplay of factors must direct us in another way. What it suggests is a less rigorous and more exploratory course: starting the other way round, not with predictions to be tested but with the answers already given to be explained, and the explanations to be used for understanding what may be the relevant variables. This is made all the more easy, since we have a very strange pattern to start with: one major type of conflict keeps appearing consistently in almost all situations observed.

We will, therefore, start with a description of the existing conflicts, in this way analyze how the situation is structured, and from there on study the interplay of personalities with such structured situations, with a view to finally being able to discuss what is the real meaning of the conflict and what are the limits set by social control for its development.

The Existing Patterns of Conflict

Out of the twenty cases we were able to study, we found sixteen clear cases of conflict between the technical engineer, on one hand, and the assistant director and/or the director, on the other. Besides this dominant pattern of opposition, there were six or seven cases of assistant director versus director, and two or three of comptroller versus director, the conflicts of these latter types being not only less numerous but also more diffuse and less demanding than the former. The dice, we may assume, are well loaded for only one kind of outcome. Whatever the character of the people who happen to staff the different roles and whatever the peculiar types of combination which may occur in their distribution throughout the thirty different plants, clashes of personality will almost never occur outside of these quite narrow patterns.

Let us now take a closer look and analyze the most relevant characteristics of each pattern.

The Comptroller Versus Director Conflict

We have already mentioned the kind of problems raised by the relationship between the director and the comptroller. Interviews showed us that comptrollers may be frustrated because of their lack of promotional opportunities and somewhat jealous of their *Polytechnique* colleagues. We occasionally get comments of this sort from a mild-mannered comptroller:

> This is not necessary to have a training in advanced maths to be in charge of a factory. . . . I do not understand why a good serious and efficient comptroller could not be a successful director.

5. This is only partially true for the comptroller, whose three or four subordinates hope to be promoted one day to his rank and therefore behave on more equal terms with him. We shall see later that this has some consequences for the comptroller's kind of adjustment.

6. Technicians in the civil service are professionals in a staff capacity; personal responsibilities are never given to them, and industrial organization has not developed as a recognized technique.

7. See, for example, the studies made on coalitions in a triad.

From a more aggressive and unpopular one:

> There are far too many graduates from Polytechnique. They poke their nose into everything. They claim they are administrators with a mathematical training whereas their role should be primarily a technical one.

But it is usually only a casual remark or a way of speaking which marks the uneasiness. In this context they view their financial responsibility, which theoretically entitles them to check on the director, as a very important function. Since they will be held accountable for any commercial decision they must countersign, they may claim the right to discuss its appropriateness and aspire to utilize their signature as a sort of veto power. But withholding their signature would be considered an abuse of position by the central office. Their duty is to check the legality not the appropriateness of the decision; they have no leeway and, furthermore, the decisions of the director are in themselves likely to be merely routine. The comptrollers' bargaining power, therefore, is clearly low, and since they are not very strongly committed to the job they are likely to retreat and diminish their stakes, inasmuch as they know they cannot succeed. Some wishful thinking, however, will remain, along with a chance of conflict whenever a poor handling of the prestige problem will have made it impossible for a more aggressive comptroller to settle for some kind of special consideration. But this is relatively exceptional.

The Assistant Director Versus Director Conflict

The conflict between assistant director and director is much more commonly expressed and runs somewl at deeper, but it is also a rather natural and acceptable one since it revolves mostly around these most permanent problems of human society, the training of the younger generation and the stepping aside of the older. Director and assistant director have to work closely together, first because plant production, the domain of the assistant director, represents the core of the directorship responsibilities, and second because the assistant director has to be trained on the job (it is his first job) both for the role of assistant director and for the role of director, since he will become in due time a director himself. The directors are supposed to train their assistant directors and give them gradually a greater part of their workload. But, since this workload is not very heavy and since the assignment which is given first to the assistant director (the problems of personnel and of plant organization) happens to be the most difficult and dangerous one, there is a strong likelihood that conflict will develop around the division of work. Assistant directors will complain that they are maintained in tutelage, and directors will complain that assistant directors are unable to assume any responsibility.

This is more or less what we got in the interviews. But, if there are some traces of opposition in the majority of the cases, actual conflict is rather rare and there are even a few cases of solid partnership.

The following excerpts, matching comments of directors and assistant directors, will show the tenor of the relationship.

First, the usual allusive statements. One director said:

> I now have an assistant but I don't know for how long; since I have been here, I have had four of them; the first one remained three years, which means that I had some help the last two years; but none of the latter ones lasted a year; not only did they not provide help but they took a lot of my time and even that of the technical engineer.

And his assistant director commented:

> The director is quite aloof; I have myself very little contact with him and no possibility of training by learning from him.

Another director said:

> My assistant director has been here two years; for us it is quite a problem; as soon as they are trained, they quit.

His assistant director had this comment:

> My director is a good old man, awfully conservative.

A third director was quite happy:

> My assistant director is very smart, he is a real wonderful guy.

But his assistant director does not follow suit:

> My director always has sweeping ideas and keeps changing them constantly; I must go along without being able to suggest anything to him.

Second the more conflictual ones. In these cases, the assistant director is usually more aggressive. One said, for example:

> My director is just hopeless; he does not accept that something could be done he has not himself seen before; one has to have his approval for the slightest detail.

And the director, for his part, said:

> My assistant director has neither the technical nor the administrative training required; I am obliged to take care of everything.

Another complained:

> My director is very opinionated; he is authoritarian at least when he can get his way.

And his director echoed:

> As regards the assistant director, I will give you my opinion; he has the engineering school disease, theory; he has no training at all and has a lot of trouble getting along.

Third, as an example of a better kind of relationship, this characteristically shorter duet:

The director:

> I let him try and muddle through; I will only interfere when he needs help.

And the assistant director:

> My director is very liberal.

One will notice that the director tends to remain impersonal, to avoid judging directly the behavior of his subordinate, while the assistant director is consistently and outspokenly personal; thus the opposition between generations makes itself felt in style as well. One will also note that the same problem is well laid out in all three groups: the junior man does not want control but needs backing; the senior man does not understand backing without control. One should add that the general feeling in the organization is that a

successful adjustment is the exception. The most exuberant assistant director, after having said:

> Here I have been able to achieve a lot because the director has given me a real free hand and at the same time has backed me whenever I needed it [adds immediately] I have had a very extraordinary chance.

The word *extraordinary* comes also to the tongue of two of the other three satisfied assistant directors.

The opposition may be aggravated, too, by the change of outlook of the present young generation, which has shifted away considerably from the more traditional gentlemanly behavior. Young assistant directors seem chiefly interested in efficiency and technique.

The main factor, nevertheless, remains the amount of responsibility. The cases of successful teamwork are also the cases where an important program of rebuilding and technical transformation of the plant gives enough interesting work and responsibility for both the assistant director and the director.

Finally, one should emphasize that the conflict, although diffuse and well argued, is not really very deep. Assistant directors are able to identify with their directors; their anger is the anger of people who have been disappointed. Moreover, the temporary nature of the relationship provides some relief. Assistant directors come and go, and the directors can evade responsibility for them easily; in their turn, the assistant directors know that their situation will change in a not too distant future. There is a definite structure to the situation, but a lot of play is allowed for the protagonists inside it.

The Conflict Between Technical Engineer and Assistant Director

Contrary to the foregoing pattern, in the relations between the technical engineers and the members of the "engineers' corps" (director and assistant director) involvement seems very great and the conflict pattern very difficult. Throughout France, our interviewees reported the same problems and almost the same feelings.

This is especially true for the responses of the technical engineers, who express consistently their irritation with and even their hatred for the *Polytechniciens*. But the assistant directors are also quite committed. Most of them, when asked about getting along with other members of the team, will refer to the technical engineer, and often in a violent and passionate way which shows how central the problem is to their preoccupations.

What strikes us first in the interviews with assistant directors is their constant emphasis on the subordinate position of the technical engineer. They will say:

> He is my subordinate—he must report directly to the assistant director.
>
> He is responsible for maintenance of machines and equipment according to my planning of the organization.
>
> He is a subordinate.

But at the same time they know this theoretical statement does not fit the reality, and they worry about it:

> The problem is that the technical engineer has a very special situation, he is a member of the team as well as my subordinate.

Some of them try to explain this difficulty away by complaining about the right of the technical engineer to attend the council, or by deploring that they are given older men as subordinates. But still others will locate the trouble at the training and professional level and admit their helplessness in facing the technical engineer. One will say, for example:

> The school did not prepare us very well for the practical technical problems of the plant; I have to ask the technical engineer constantly for advice; this makes me lose face.

Another, after explaining how inadequate his school preparation was, adds:

> We are not confident of ourselves; this may be the source of the difficulties with the technical engineers.

While a third one recognizes bluntly:

> The assistant director can discuss technical problems only if he can get along well enough with the technical engineer.

The majority of the assistant directors conclude moderately that they do not get along too badly with the technical engineers. Nevertheless, such discrepancy between expectations and reality frequently fosters more violent reactions, such as the three following, which are quite typical of the tone of the discussion and of the arguments presented:

> We [assistant directors] think that in the plants it is becoming too much a sort of Mexican army with everybody wanting to be a colonel . . . we do not need technical engineers; a good storeroom manager and a good technical foreman would be quite enough . . . and to run the whole thing, we are here; the central office seems to forget. . . .
>
> One must confess that the technical engineers constitute the most impossible group. . . . One cannot trust a technical engineer . . . and the mere existence of such a job is absurd; the service would be better with a good foreman. When somebody comes from an engineering school he cannot be reduced to a foreman job. I personally think the post should be abolished.
>
> The technical engineer supports the rebellion of the maintenance workers against me. If he could have his way, I could not interfere in the slightest way in what is his own business, that is, everything in the plant. . . . Technical engineers should be suppressed; there is no place for two men; they do not have the tactfulness, the human relations skill to be in charge of the personnel.

Technical engineers may be somewhat less violent than described in these last examples, but they are consistently critical and aggressive. All but three, directly or indirectly, criticized the members of the "engineers' corps" and the only one who was favorable added to his comments this significant understatement:

> The temper of the young *Polytechniciens* has changed very much; they do not think they know everything in advance; some of them even are modest.

His colleagues for the most part complained of the haughtiness and the incompetence of their assistant directors and of Polytechniciens in general:

> What is so depressing is the lack of technical experience of people whose job it is to be industrial leaders. . . . We have no voice and they just don't know. . . .

Some of them related in allusive details, as one skillful storyteller put it:

> . . . [their] unbelievable, terrible mistakes.

But the most widespread frustration concerns the monopoly of the engineer corps over the possibilities of promotion, which is resented as a general conspiracy of the *Polytechniciens.* Only some older and better established technical engineers refrain from what they tend to consider begging for promotion, and say they would like only to strengthen the position of the technical engineer versus the assistant director.

No wonder that the comments on the overall relationship are rather sour:

> There is no teamwork possible between the *Polytechniciens* and ourselves. The gap cannot be bridged.

> Our bosses are all *Polytechniciens;* it is a feudal system . . . there is not enough work for them . . . one should cut through the services, democratize and suppress the monopoly; it is a sort of Mafia. . . .

The directors for their part, try to avoid making this kind of personal remark; they, of course, benefit from the existence of the assistant director, who acts in a way as a buffer between them and the technical engineer. They tend to answer in more general terms, discussing the problems involved instead of passing judgment.

A few of them, however, usually the ones who have been at some time, or are still, without an assistant director, will present in more reserved terms a similar picture:

> . . . My technical engineer is very competent; unfortunately the central office did not give him satisfaction and he thinks I am responsible instead, he is very aggressive and bitter. . . .

> . . . My technical engineer is very good but he is also hypersensitive. We are at odds with each other . . . he has no ability to synthesize.

From this brief report, the feelings of the players emerge rather clearly, and some of their motivations already appear. We can now turn to an analysis of the conditions and the rules of the game they are playing.

Theoretically, the technical engineer reports to the assistant director, who is in charge of production, for all his duties, maintenance, repairs, and work contracted for outside, which must be subordinate to the overall imperative of production. But this arrangement is bound to hurt the feelings of the technical engineer, since it is a permanent subordinate situation he himself has no chance to get relief from by occupying in due time the top position, and, at the same time, a situation which does not fit our society's regular expectations about necessary training and competence and which may even contradict some of these expectations, such as those concerning age and seniority.

A permanent "illegitimate" state of subordination will usually produce revolt and retreatism, but this particular one is peculiar in the sense that it does not leave the technical engineer helpless, inasmuch as it gives him so many possibilities for retaliation that he can practically deny his official subordination by making it impossible for his superior to initiate action without his approval.

The process works more or less in the following way:

First, production has become completely routine and it is only maintenance which will raise problems with the consequence that the trouble shooter, the man who can find solutions, will be the technical engineer, and he will defend his position of strength (the impossibility of his superiors getting along without him) by keeping his own domain free from any rationalization.

Second, the assistant director will not be able to control the technical engineer because, while his domain is that of the rule of thumb, he lacks the necessary practical training to learn the tricks of a trade which the technical engineer jealously preserves. Moreover, the official hierarchical decorum which surrounds the "engineers' corps" will protect the technical engineer by making it impossible for the assistant director to undertake a trial-and-error learning process and thus lose face. As a consequence, the assistant director can give formal orders to the technical engineer but cannot control their execution, and the technical engineer who, of course, cannot give orders to him, can, however, control the assistant director's behavior inasmuch as he will be able to set the limits of what is possible and what is not possible for him to do.

Third, the assistant director has a very weak chain of command; the foremen who relay his orders are not very efficient and he distrusts them. The technical engineer, on the contrary, can rely on a strong group of journeymen who are competent and active. At the shop level, these journeymen, the maintenance workers, are in a position of strength vis-à-vis the foremen, and, for all practical purposes, they are the real bosses. This last element of the situation is naturally strategical. The technical engineer protects the privileges of the maintenance workers, who cannot be controlled by anyone but him, and the maintenance workers, in their turn, make the position of the technical engineer very secure, allowing him to develop and maintain the advantages described in the preceding paragraphs. As one of the technical engineers summarized quite frankly:

> . . . I personally have my journeymen well in hand, and because of that, what I want to do I can do and the director is obliged to go along with what I want. . . .

Finally, any change in the organization of production itself, any move of the assistant director in his own domain, will be liable—because of the position of the maintenance workers as natural leaders in the shop—to the interference of the maintenance department and its all-powerful chief. Another technical engineer explains this in dry terms:

> . . . On top of our duties we are often obliged to take up the work of the assistant director. . . .

This practical success of the technical engineers is bound finally to have some repercussions in the formal setup. It was through this that they won the right to sit at the Council, which means that even formally there is an ambiguous situation where, on the one hand, the technical engineer is the subordinate of the assistant director, and, on the other, as a

member of the Council and usually a senior member he cannot be brushed off easily. As a consequence, the director has become a rather weak arbitrator between a senior and a junior executive. As one assistant director put it very angrily:

> The Council is becoming a soviet . . .

The reaction of the assistant directors to this situation is likely to be bitter. They have as many reasons to feel frustrated as have the technical engineers. They are invested with formal authority but are constantly prevented from exercising it actually. And they have no alternative. Personnel administration is taboo; they cannot initiate any action in the face of the rigid bargaining relationship between the unions and the central office; training, reallocation of jobs, the use of moral and promotional incentives are all made impossible by the strictness of the seniority system. Daily problems of running the plant are completely boring. The only possibility of action, the only challenge for the young assistant director, is the kind of progress which comes from technical improvement and the reorganization that goes with it, and here, too, he must encounter the technical engineer's knowledgeable comments. He may settle for a moderate course, choose the diplomat's way, concede a lot to get a few limited results; this kind of choice is all the more rational since his situation is a temporary one and he can regard himself as being in a learning position. But more frequently, because he is young and self-conscious, he will fight back, try to keep the technical engineer in line. In this case the stage is set for one of those perennial petty wars where the antagonists will not be able to decide any case on its merits, inasmuch as these struggles can be used to weaken the position of the other fellow.

A neat and typical example will illustrate the possibilities in this situation very well, at least as regards the behavior of the technical engineer; the potential opponent in this case is the director, in the absence of an assistant director in the plant at the time:

A new foreman had been brought to the plant a few weeks before the incident; unlike his colleagues he had, through previous industrial employment, some good technical training. An important piece of equipment happens to break down in his shop; the maintenance worker responsible for its repair is called in, fumbles around and reports it is serious and that production will have to stop until further notice. The foreman resents his arrogance and an argument starts immediately; the foreman tells the maintenance worker that he is lazy and incompetent, proceeds to work at the equipment himself and soon discovers the problem is not serious and that the reason for the breakdown is the poor maintenance of one of the parts. Furious, he approaches the second-line foreman to enlist his support in asking for a drastic punishment. This fellow tells him to quiet down and to see the technical engineer first. When approached, the technical engineer does not want to listen; another argument starts and finally the foreman is told that he had no right to interfere with a problem which was not his own responsibility in the first place, and for which he is surely incompetent as all foremen are. Still more furious, the foreman breaks in immediately to the director's office. The director listens to him quietly and carefully, congratulates him for his zeal but tells him with all the tact he can muster that he will have to inquire into the matter further and that he does not think he will be able to impose a sanction because there is not enough proof; then he drops the whole matter. Relating the incident later, the director explained that his decision was the only rational one because he was sure that had he punished the maintenance worker, the whole maintenance group would have immediately struck with the covert support of the technical engineer; they would have been able to shut down the plant, and the central office would never have supported him on such a menial and ambiguous ground. His acting in the case, therefore, would have made him lose face completely. As a corollary, of course, was the unpleasant consequence of discouraging one of the rare foremen who could have been a decisive influence in the plant but instead was led to quit in disgust. But, if it was a painful decision, the director still felt that it was the right one, and was happy in retrospect not to have had an assistant director at the time who, he felt, would surely have capitalized on the case only to make matters worse.

The kind of conflictual situation described in the foregoing appears very well structured. The four exceptions (20 percent of the cases), and the differences among the rest of the cases, raise interesting problems, the analysis of which can teach us a great deal about the range of deviance possible.

The rebuilding and remodeling of a plant, with all the reorganization which is thus made possible, presents the only material factor that can upset the regular pattern. As we have already seen, it gives both the director and the assistant director enough responsibility and initiative to make the relationship between them easier; in addition to this, however, it also gives them a clear lead over the technical engineer. The source of uncertainty in the planning ahead no longer comes from the maintenance and repair problems but from the decisions which director and assistant director will take as regards the new layout and the carrying out of the plans. Two of the exceptions to the regular pattern coincide with the two most important remodeling projects, and in a few other less important cases of transformation we can observe some clear repercussions in the relative bargaining power of the antagonists.

The personality and the ability of the technical engineer makes for a second type of difference. Generally a successful senior technical engineer will be more cautious and less aggressive, which brings a more peaceful relationship. At one extreme of the range of possibilities we have the case of a technical engineer who has succeeded so well in the face of a weak director and constantly changing assistant directors that he is the covertly recognized master of the house. This makes him very tolerant of and friendly to the *Polytechniciens*.[8] At the other extreme we find a technical engineer who could not stand the strain of his role and seems to have broken down completely, neglecting his own work and retreating in a hands-off policy.

The personality of the assistant director also has some

8. Contrary to what could be expected, this does not make for less trouble in the plant since the maintenance workers, who have lost their natural protector because of the truce in the daily war, feel more insecure and will fight more bitterly to keep their privileges at the shop level.

relevance, but never accounts for such extreme differences; it will change the general tone of the relationship but without altering its balance. No assistant director will break down over the situation, neither will any succeed in brushing off the technical engineer except in the cases of plant transformation. This is a tight game, the players are anxious to get the maximum out of it, and, provided there are no special circumstances, there will not be any significant variation in the rules.

The Technical Engineer's Pattern of Adjustment

It is not only the technical engineer's relationship with the assistant director that seems to be well structured, but his whole pattern of adjustment and even the salient points of his attitudes toward the job can be quite accurately predicted.

It is amazing indeed to find how the interviews of most technical engineers throughout France so closely match, although these people rarely see each other and thus, surely, cannot be influenced by personal interaction with each other.

First and foremost, the technical engineers love their job. They are very proud of listing the whole series of their duties; they glory in being busy and a good third of them complain of being overworked, of not having the time to look after everything; but even when they claim they are exhausted, they seem to be no less enthusiastic about their "diversified and challenging job"—that job so essential to the functioning of the plant that:

> . . . if there is something that does not work in the maintenance department the whole plant will be directly affected.

Jack-of-all-trades, competent and active, the technical engineer thinks of himself as the man on whose shoulders the whole plant relies.

Second, the technical engineers appear to be authoritarian and paternalistic with their subordinates. They are the only ones in the system who take exception to the seniority principle by claiming they would like personally to have the responsibility of rewarding and punishing. They talk of their subordinates and of the workers generally without observing the usual precautions. In the two cases we have been able to analyze most closely, their workers complained of their authoritarianism, although they gave them the most wholehearted support otherwise. The relative harshness of the technical engineer, however, does not mean that he does not communicate; on the contrary, it seems he is more perceptive of the feelings of the workers than are the other members of the management team, and more realistic in his appraisal.

Third, if they are overly paternalistic with their subordinates, the technical engineers are extremely critical of their superiors, ready to pounce on their mistakes with an unfailing jealousy, and they are extremely intolerant of any kind of control. They complain bitterly about the incompetence of the "engineers' corps," and the lack of courage of the people at the central office; they disapprove of the way the system works and seem to hold the *Polytechniciens* responsible for "the whole mess," especially for their poor wages and absence of promotion.

Fourth, the technical engineers are quite realistic; their interviews are more precise than those of the others; their arguments always revolve around practical problems. It seems they would like to give an image of themselves as senior, responsible, overworked people who are constantly on the run to repair the mistakes of intelligent but irresponsible playboys. This self-image fits well enough with the comments made about them by the other members of the team, who see them as intolerant and unpleasant fellows who are, nevertheless, very competent, as well as with the comments by their workers who see them as paternalistically inclined but also efficient leaders.

Finally, this lonely, austere, and bad-tempered man seems to be not only very happy but all the more happy when he has some gripes to express. However paradoxical it may seem, there is a definite tendency for technical engineers to express much less fondness for the job when they cease to be aggressive with other people. To be sure, the relation is not linear, but the association between griping and fondness for the job is more positive than negative.[9]

But now, what about the four technical engineers whose cases did not fit the usual conflict pattern? Their attitudes, of course, are also exceptions to the individual adjustment pattern, but their deviations from this latter pattern are smaller than might appear at first glance.

If we take, first, the three cases of technical engineers who were dominated by the assistant director, we find that these people still said they liked their job and still presented some of the usual complaints. What is gone is their pride, their activism, and their aggressiveness; they are passive and grieve silently; they even seem to have lost their authority over their own subordinates once they became unable to fight their superiors.[10] Such an outcome may help in elaborating the analysis of the situation which the technical engineer has to face; his is a rewarding situation but a situation which brings a lot of strain because of the responsibility and overwork, the loneliness of the job, and the constant fight it requires. Some people are bound to break down, which means becoming a misfit.

At the other extreme, in the one clear case, and in the one or two more dubious cases, of success—where conflict seems to recede because of the dominance of the technical engineer—gripes become less frequent, and the austere technical engineer will mellow a little without, however, losing his caution.

The fight for power seems, in the last analysis, to be the major determinant of the technical engineer's adjustment. And power, in his situation, can only be achieved if he follows a very narrow way. There is no alternative: either he adopts the required behavior of his own social role, or he gives up

9. The curve could be of this sort:

10. We were able to observe the reactions of the subordinates in two out of three cases.

and loses his self-respect. It is, of course, impossible to ascertain to what extent the situation molds the personality traits and to what extent a self-selection process is operating. Since there is relatively little turnover, it seems, however, that the constraint of the situation is a powerful force.

A last consequence is worth mentioning. As the technical engineer's success in the fight for power comes from the lack of rationalization of his field of action, so it is this lack which gives him the strategic advantage of controlling the only source of uncertainty in an otherwise routinized setup. He will, therefore, try very hard to keep it that way, which means he is likely to adopt a generally conservative attitude on all matters of organization, and that he will devote his innovating abilities to sideline problems, never trying to make progress in the control and predictability of his own field but rather holding to the individual rule-of-thumb way.

The Director's Adjustment Pattern

There seems to be as much variation among directors' reactions as there are similarities among those of technical engineers. Such a contrast may surprise the reader, since both groups participate in the same bureaucratic climate and both have to adjust to a constrained situation where they cannot deviate much from the usual pattern of behavior. But it fits our hypothesis as to the importance of power relationships for individual adjustment very well. The director's situation in this respect is very different from that of the technical engineer. He does not have to adopt a definite pattern of action in order to assert his position. He is given prestige and influence without having to fight for it, but is, at the same time, frustrated in his enjoyment of it, since he has no power to institute change. But unlike the technical engineer, he has no other group to hold directly responsible for his frustration.

We have already described how the director does not have the right to hire and fire, nor even the possibility of putting workers in the place he thinks would be best; nobody depends on him but the weak group of foremen, or supervisors. Production and sales problems are routine. Maintenance is in the skillful hands of the technical engineer. Only new works and general reorganization may present a challenge. The director's kind of leadership is, therefore, more a judicial-administrative than a managerial one.

One could argue, of course, that a judicial-administrative function might be very rewarding and that many people will adjust successfully to it. But, in the present case, such a function is in contradiction to the training and to the prior expectations of the directors, and also, partly at least, to their present values and frame of reference. They are constantly called upon to act as administrators, but they are also reminded that they are industrial managers and therefore responsible for progress and efficiency. They even have within their own organization a few men who are examples of success in this industrial sense, and their prestige is never contested.

The director, therefore, does not get much satisfaction from his professional career. Certainly the prestige of being a member of the "engineers' corps" still has some value, but, in France's more competitive modern economy, it does not carry so much weight anymore. Rewards come only on the formal side, and there is little likelihood of their inspiring a real sense of achievement.

These difficulties of adjustment, however, could not lead to a unique pattern of behavior since, contrary to the technical engineers' group, the directors' group is a dominant group and could only rebel against the whole bureaucratic system. The central office, of which they complain a great deal, is staffed by members of the engineers' corps like themselves and they cannot dissociate themselves too much. They have no common objective for which to fight and, because of their personal freedom, they can find an easy retreat in personal achievements outside the job.

Directors adjust to such a situation in three different and even opposite patterns, which correspond to three distinct ways of life, not to mention a fourth intermediary one.

The first pattern, that of happy, successful adjustment, is very rare. It corresponds to the two or three cases of complete and successful plant reorganization. Certainly the directors who are able to achieve such a result, in the organizational climate which we have described, must have most special qualities. But they also must have had good luck, since, under the actual conditions, it is only possible for the central office to allow the necessary allocation of funds for reorganization to a few directors. Each director, of course, can attempt to attract the attention of the central office to his "sound" project, but, since most plants are in need of change, he must have special and solid ground to win out over his competitors. Regardless of the directors and the sheer value of their plans, certain factories will be considered first simply because of practical, material arguments and certain others because of a long history of precedents. Of course, a director is not appointed to a factory without some consideration of his qualities; he must fit into the possibilities of the situation, although the hazard of seniority may interfere with rational placement.[11] Moreover, since it is difficult for assistant directors and directors to furnish proof of their qualities of leadership, outside of special cases for which certain people have to be chosen, the choices are not choices made according to accomplishments but the more hazardous choices of personalities. As a result, qualities of diplomacy, skill at patching up, at smoothing down, at compromising, tend in the long run to be better appreciated, while the more independent personalities, who could have succeeded well in another environment, tend to be set aside.

Seen through his colleagues' eyes, the happy adjustment of the successful director looks like a matter of luck and favoritism. But, at the same time, its rarity gives it a brilliant aura. For the man himself, it is extremely rewarding since it allows the satisfaction of two contradictory demands, the demand for security and the demand for achievement. And, finally, for the organization this kind of adjustment, rare as it is, has a tremendous importance in that it offers an embodiment of perfection as a yardstick for measuring other performances. Directors themselves, although they usually profess to reject such a standard, are much influenced by its existence.

11. One man who, because of his special qualities, was well qualified to lead the necessary reorganization of a certain plant was not available when an appointment was to be made there.

At the other extreme, in the usual routine-like plant situations, we find two contrasting types of reactions corresponding to two different ways of life.

Directors who choose the first of these claim they have the entire responsibility for everything which might ever happen in the plant. They justify their claim by taking their formal power seriously. When giving the stamp of their authority they pretend they are perfectly free. They happen, of course, consistently to choose certain kinds of solutions, but they explain this by emphasizing their concern for the general interest. They are careful and cautious people who believe that they have to sacrifice short-run advantages for the long-run benefit of the institutions they are in charge of. This constant denying of reality makes for a rather dramatic public character, who can play sometimes with great sophistication the part of an elder statesman, carrying with him the impressive majesty of the public service, however weak his decisions of the moment may be. His own private person seems itself to be influenced. The aura of glory one sees surrounding him will not leave him at the factory gate. A poised and dignified personality in and around the plant, he shows all the external marks of happy and successful activities.

The colleagues of this type, who have chosen a second kind of adjustment, appear, on the contrary, to be extremely unhappy. Their solution of their difficulties is not to deny or to sublimate reality but to exaggerate its unpleasant aspects. While the elder-statesman type pretend they are free to do everything they would like to do, that nothing has ever been imposed on them that they themselves had not previously required, these others claim that they do not have the slightest leeway, that they are just transmission cogs with no initiative, and, finally, that their job is completely useless. But this pessimism is more sophisticated than would appear at first glance. By minimizing their professional role, they are preserving the self-respect of their own private lives. If a director does not have any possibility of achievement at all, one cannot accuse him of not having succeeded professionally. He can, therefore, still make a claim to being a brilliant and distinguished citizen, however poor his work achievements are in his own eyes. While their colleagues identify with the successful director, those of the latter type deny the possibility of success.

These two opposite patterns of behavior are, of course, not very often as clear as this description. But a sizable group of directors have reactions surprisingly close to these models, one out of four directors claiming that they are perfectly free and responsible, one out of three claiming that they do not have anything to decide upon.

In between these two so-called unsuccessful groups, there are a variety of different personal adjustments wherein one can recognize traits of both the first and the second pattern. Usually, however, people in this group are more realistic and sensible about their own possibilities, and a number of directors among them might be considered somewhat closer to the successful pattern which we first described. But in certain other cases we find more incoherence than realism, some people claiming, at the same time, that they are all powerful and unable to decide independently.

The Assistant Director's Adjustment Pattern

Assistant directors seem to be able to stand realistic appraisal of their own situation much better than directors. But, if their individual reactions are not as sharply conflicting among themselves as those of their elders, they are still quite diversified and far from being as structured as those of their natural antagonists, the technical engineers.

Such kind of adjustment is well in line with the peculiarities of their own situations. Theirs is at the same time a learning job and a very secure one, so that they do not have too much to worry about; they do not have so much at stake as either the directors or the technical engineers; being lucid about their problems will not endanger their self-esteem.

Their relatively inferior situation in the power relationship is, of course, a strain and it does involve them affectively, but it does not affect their entire outlook. Assistant directors can find scapegoats in the old generation, curse the organization system, and believe that it will eventually change. Whether they wait patiently for their turn to come, or fight back bitterly, or prepare for their departure from the organization, criticism still remains, for most of them, a healthy, enjoyable activity which does not have to become self-derogatory. So one senses, within their interviews and coloring most of their attitudes, a feeling of detachment, a certain freedom of commitment which makes it easier to adjust temporarily, and reasonably well, to a situation, without ceasing to criticize it. Intellectual aggressiveness can still coincide with a rather well-balanced affectivity.

As regards the job itself, however, the conditions for a happy kind of adjustment are narrow. Three different givens on which the assistant director himself has little influence, if any, will determine it entirely; first, the existence of a program of reorganization, or at least of considerable non-routine activities in the plant; second, the willingness of the director to give him a free hand; and third, the relative helplessness of the technical engineer. Usually all these givens will exist at the same time; when there is a program of reorganization the director is likely to be more broadminded and cooperative and the technical engineer will lose his decisive veto power. In such a situation, the assistant directors are enthusiastic about their jobs and generally much better adjusted.

Such an adjustment, which can be recognized in three or four of our cases, seems to be conducive to more tolerance for the central office policy, and to more moderation and realism in the discussion of the problems. Happy assistant directors, however, still criticize the system of organization and the behavior of their elders; they still think they might eventually quit the organization. But they seem to have a much greater sense of their own responsibilities and more interest in practical problems. Beyond this, they do not appear to share similar personality characteristics.

The difficulties most of the rest of the assistant directors (three-quarters of them at least) run into do not produce a consistent pattern either. We will find, in a general climate of moderate frustration, all sorts of individual adjustment, with some common characteristics, however. First, the generalized hostility to the system of organization and to the older generation which we have already mentioned is common; second, sharp comments on the technical engineer with,

at the extreme, the demand to suppress the job; and, third, a general emphasis on technical and organization problems as opposed to human problems.

These common traits would seem to constitute an ideological orientation more than a pattern of adjustment, and surely they are perceived by the assistant directors themselves as coherent reform propositions. But, if one analyzes them as steps in the process of adjustment to the organization on the part of future directors, one will find a different logical thread in them.

When they enter the organization as students at the so-called preparatory school, the assistant directors say almost unanimously[12] that they were attracted to public service, and especially to the organization, because of its liberal tradition. They wanted a job which could give them broad human responsibilities rather than narrow technical ones. When asked how they imagine their role as assistant directors, all of them answered that they wanted to give more importance to their human responsibilities than to their technical ones. They always emphasized in their observations about factory life the importance of being a leader, of assuming a leader's responsibilities toward the workers and toward the community. They see themselves as members of a generation conscious of the human problems of industry and impatient to introduce change in that domain, and they feel they are as much opposed to their elders' timorousness and conservatism as to the engineers' paradise where human beings will have no place, as they feel some of their peers fascinated with technique seem to call for.

A few years later, or at any rate to their colleagues with just a few years' seniority, such opinions will look quite childish. The assistant directors who have more than one or two years' seniority do not have the slightest regard for their role as chief of personnel. Human problems for them are not to be taken seriously. Their only concern is for technique and for the possibilities of achievement which come through the use of technique. When asked about problems of leadership and about the training in "industrial psychology" they had been given at the school, they are generally very bitter. To them, such training does not have any bearing on the hard realities of factory life.

We have no way to prove that such an opposition does not correspond to a change in the mood of two successive generations; but it seems reasonable to assume, in view of the relatively small difference in age of the individuals concerned (five to six years on the average), that this opposition is the outcome of a psychological crisis which the young assistant-director has to surmount in order to adjust to his role.

Having held the belief that the older generation was inefficient, weak, and uncaring because they were conservative and old-fashioned, he has now come to realize that the situation does not allow one to be active and successfully efficient. He understands, also, that his human leadership role is only formal and that he cannot influence the workers' behavior, even with the best of intentions. There is no give-and-take possible because there is no freedom to compromise on either side. Whatever his own earlier orientation, he has to recognize that the only way to bring change is through technical progress. Technique is his only chance, and he is likely, after some bitter disappointments over problems of personnel to change his own views to fit the situation. Even here, of course, he will not have a great deal of success because of the opposition of the technical engineer. But such a struggle in its more personalized form will be more exciting and eventually more rewarding than the fight against bureaucratic rules. Then, too, there are the examples of the factories where important innovations have been successfully introduced, and with which the assistant directors are much more ready to identify than are the more envious directors.

The assistant directors' ideology, therefore, is not an idle one; under the mask of rationalizing industry, it presents a powerful argument for giving their group a chance to get things done; the obsession with technique may be narrow-minded, but it is producing change and change has become their first goal.

What still looks puzzling, however, is the second reversal that will take place when the assistant director becomes a director. How is it that the same people who once were active and aggressive in pushing ahead technical arguments and in setting aside all other problems, will now be cautious about progress, and will consistently give the lead to human considerations? To understand it we must qualify what we have said about the assistant directors' ideology. It is, to be sure, not an idle philosophy, it is a philosophy intended for action; but it is not the rationale for actual action. Assistant directors cannot and do not introduce significant change outside of the few cases of overall reorganization; they fight for change but do not succeed, and do not even believe completely that they can succeed. Their lack of responsibility and of actual commitment make it possible for them to state their point lucidly, without assuming the burden of the consequences. But when they become director, they have to assume one way or another the responsibility of the system as it is, which means giving priority to human relations since, in a bureaucratic equalitarian organization, these considerations become preponderant. But their view of human relations has now become rather skeptical and conservative, and will become more and more so inasmuch as their own possibilities of achievement will narrow down. Things do not change, they feel, and perhaps ought not to change easily; human problems are the key to everything but it is a key for locking more than for opening up. Humanism in this context will mean recognition of the other fellow's right to oppose change, i.e., acceptance of the status quo.

The entire career development of the members of the *engineers' corps* can be interpreted as a gradual adjustment to the organization as it is, with its principles of seniority and impersonality, with its rigidity of behavior and its resistance to change. In so adjusting, the directors will resign themselves to narrowing down their expectations still more. But they will not abandon, really, their former ideology; they will still look toward change as a positive value which only special circumstances oblige them to discard.

Such an adjustment is in sheer contrast to the aggressive kind of the technical engineers, who can adjust successfully

12. We were able to inetrview the twelve engineers who were studying at the school at the time of the survey.

only when they deny the formal order of the organization and, indirectly at least, some of its main principles. One might wonder, however, at this paradox; the leaders of a stabilized, conservative, bureaucratic system profess a philosophy of change in organization patterns, while the "coming men" group opposing them is consistently conservative in that respect.

The Meaning of Conflict in a Bureaucratic System of Organization

It seems clear that at the root of all the conflicts which we have analyzed there is some kind of fight for power. Such findings are well in line with the results of most recent researches in organizational behavior, which have shown how central the notion of control and power may be for understanding human relations in large-scale organizations.[13] We will not investigate these findings any further here, but we can bear in mind that there are no organizations without power problems and conflicts arising out of them and, moreover, that there are none where these conflicts are not checked by some kind of social control. We will now try to discuss on a more general basis, in terms of the forces operating in all bureaucratic systems of organization, the meaning of the special traits which make these conflicts so acute in the case we have studied and the nature of the social control which still holds the organization together.

What seems most striking when we compare the situation of our management team with the situation of the most common type of organizational hierarchies are two facts: first, that many forces which usually prevent the development, or at least the expression, of conflict are absent; and second, that there is a peculiar balance of power, of prestige and of involvement in the job which makes it necessary and even rewarding for the protagonists to engage in conflict.

On the negative side, i.e., in the absence of the traditional forces which prevent conflict, three main remarks can be made. First, our four group members have perfect security, not only in regard to tenure but even in regard to promotion; so that they do not depend upon one another or upon higher-ups with whom they could line up. They have, in this respect, nothing to fear and can be, if they want, as independent as they please. Second, they have no chance of being materially rewarded or even of gaining in status by their personal achievements; personal achievements are not even measurable; it is almost a private affair for each individual concerned, so that they are delivered not only from fear but also from hope. Third, the differentiation of their roles and their specification is such that teamwork is not necessary to keep the system going; it surely may help morally and materially in achieving the required goals but the absence of cooperation does not bring much strain. Our four individuals, therefore, can be considered as completely autonomous in the sense that there is nothing in the system they belong to which requires them to cooperate, to adjust to each other, or to compromise on their conflicting interests. They have little to gain in the long run by teamwork and compromise, since successful performance does not require it and since their future is already set up in advance and will not be changed by the kind of relationship which they have with their colleagues.

On the positive side we will notice that the opposition between maintenance and production, which is at the root of our main conflict, is found in all industrial setups but does not usually stir up much trouble. A rough comparison made with factories producing the same product with the same technology in other countries shows that some of the technical difficulties about which people in France are so worried do not even come to mind in different systems of organization; the human relations and power relations arrangement alone seems to be responsible. According to our findings we can explain the acuteness of the conflict as being due to an unusual distribution of the power of initiating action in the plant, of the official prestige, and of the commitment to the job. The actor whose official prestige is lowest and whose commitment to the job, because of his lifetime involvement with it, is highest is in a position—due to his control of the major source of uncertainty in the routine of factory life—to control also the initiating of action within the usual range of behavior. His antagonists have no way to retaliate effectively, except in special circumstances, but they can adjust to their situation because of a lesser commitment to the job which makes retreat easier.

At a higher level of abstraction, the major elements of our conflict situation appear to be the rigidity of the social roles the organization presents to the individuals, their isolation from one another and the lack of congruence of these roles with the actors' expectations. There are only a few roles, and they are all well structured and do not allow for individual experimentation and innovation. People do not expect to shift from one role to another and do not depend much upon one another for the attainment of their goals. They can therefore take up the cause of their group without either mental reservations or provisions for eventual change of circumstances. If there should be some possibility of an equal enough fight, an otherwise trivial opposition of roles will develop into a basic conflict which will permit the actors to express their own frustrations about their professional situation.

Such an arrangement reminds one of earlier role differentiations in Western societies. Modern professional role systems compared to, say, those of the eighteenth century appear to be characterized by a tremendous diversification of the professional roles and the constant shifting of the individuals from one role to another. As a consequence, lifelong intergroup conflicts have receded considerably; one can argue that the tensions they generated have been at least partially replaced by the tension of interpersonal competition and by the personal anxieties of individuals who have been obliged to internalize some of these earlier role conflicts. But, in any case, people who could conflict on a more permanent basis tend now to be too far apart, and people who are in constant enough contact are much too dependent on each other and know too much of the other fellow's viewpoint to be able to develop such basic conflict.

Does it mean that, as a consequence, the organizational system we have studied can be considered as a conservatory of more ancient patterns of behavior? It is certainly true to

13. See, for example, Dorwin Cartwright (ed.), *Studies in Social Power*, University of Michigan, 1958.

some extent, but what is the organizational logic which accounts for such a result?

Three related principles govern the social system of the factories we have studied: first, complete equality between people who are in the same hierarchical ranking and who have roughly the same role, with seniority alone accounting for differences and promotions; second, separate recruitment from the outside for each of these major roles, with abstract competitive examinations as criteria of selection; third, impersonal and detailed rules applying to all possible happenings, so that most uncertainty and concomitant human intervention can be eliminated. There may be some theoretical opposition between the principle of equality-seniority and the principle of outside recruitment, but if one views them both as a way to concur with the common goal of eliminating all human intervention from the organizational machine, they are, on the contrary, mutually reinforcing.

From these principles one could see very well how isolation and rigidity of the role will develop. Strict application of equality and seniority will make interpersonal fights within the group impossible. Outside recruitment will separate the groups and prevent communication. The elimination of uncertainty and human intervention, however, should act as a check insofar as it is intended to suppress power relationship. But our example will have shown that there is always some loophole and that power dependencies and conflicts will grow around them.

It can be argued that these three principles of action are the core of the bureaucratic system of organization and that they are present as tendencies in all large-scale organizations. In private organizations, however, they are checked by the powerful unifying force which is provided by the control of the promotional ladder. But the lower we go down the hierarchical scale, the weaker this control becomes with the result that intergroup fights will tend to develop in the lower echelons. In public administrations such a control becomes more difficult at higher levels as well, especially in the older and more "bureaucratic" ones of which our case is an extreme example. Rigidity of roles and lack of communication between them will make conflict likely to appear in all weak spots of the system.

But even in the case at hand, social control sets limits. Other people's privileges cannot be infringed upon; minimum production standards, order and decorum, status preeminence of the director must be observed. Two sets of forces in this respect seem to be at work. First, the feeling by members of all groups that their privileges depend at a very high level upon the other groups' privileges, which means that the authority of the director as a final arbitrator for keeping peace and order must be recognized; and second, the feeling that the standards of the organization's achievements and practices should be comparable to general expectations in society at large. The first kind of pressure keeps the system working on a routine basis, the second accounts for change and progress which comes from the top down in an impersonal way, with the members of the "engineers corps" as change agents. Occupational or professional roles, however, remain frozen into a very ancient pattern, with no likelihood of internal motivation for change. This alone invites the foreseeing of some kind of crisis when the acceleration of progress will make it impossible for such a system to adjust to modern society.

Ethnic Origins, Educational Level, and Responses to a Health Questionnaire

Sydney H. Croog*

Attitudes toward illness and medicine in various population groups, differential reactions to pain, as well as relationships between social status and types of illness have been examined in a number of studies in recent years. Such research has provided accumulating data on the role of social and cultural elements in perceptions of illness and in the etiology of certain physical and emotional diseases. Evidence from reports of war observations and experimental situations, as well as from clinical studies in medical fields offers numerous indications of relationships between perceptions of illness or pain and factors external to the individual.[1]

However, despite increasing awareness of situational, cultural, and emotional variables in the experiences of pain, illness, and recovery, much remains to be achieved in the identification of culturally defined responses to illness. In both clinical and research work with disease and disability, for instance, it is common to make assumptions about individuals on the basis of group norms with little systematic, empirical evidence of what the group phenomena may be. For example, numerous physicians treating patients from varied ethnic and racial groups in America are aware of differences in reaction to symptoms of physical and mental illness, but in the absence of empirically validated evidence of group norms, they must proceed primarily on the basis of individual experience and clinical intuition.

The present article is a report on the responses of 1,182 young men from five ethnic groups to a health questionnaire, the Cornell Medical Index. The primary aim of the study was to determine whether significant statistical relationships would be found between: a) ethnic origins and b) scores recorded on a test instrument designed to help appraise symptoms of medical significance. A broad aim was the exploration of cultural differences in the expression of symptoms.

Research Procedures

Data for the study were gathered at Fort Dix, New Jersey, as part of a research project undertaken in 1954 by the Neuropsychiatry Division of Walter Reed Army Institute of Research.[2] The broad Army project was concerned with the analysis of techniques for predicting the incidence of ulcer, and the Cornell Medical Index was included as one of a set of tests and questionnaires.

Two thousand Army inductees, as they were processsed through the Army induction center, were chosen by a random selection technique. As participants in the research, all completed the Cornell Medical Index and a sociological questionnaire designed by the author, besides carrying out other procedures involved in the research design. Since preliminary appraisal of Cornell Index scores in terms of sociological factors revealed certain marked trends, these lines of approach were followed through, and the results are presented here.

Selection of Ethnic Groups

After the data-gathering phases of the project had been completed, the total sample of 2,000 men served as a pool for the selection of ethnic samples used in this study. The ethnic groups were isolated on the basis of operationally defined traits. Those men who, on the sociological questionnaire, identified *both* parents as being of a specified national origin

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1. The range of materials is broad, including studies in psychosomatic medicine, public health, physiology, psychiatry, and other fields. See, for example, Henry K. Beecher, "Pain of Men Wounded in Battle," *Annals of Surgery,* CXXIII (Jan., 1946), 96-105; Stanley Cobb, *Emotions and Clinical Medicine,* W. W. Norton and Co., New York, 1950; D. L. Farnsworth, "Pain and the Individual," *New England Journal of Medicine,* CCLIV (March, 1956), 559-562; F. P. Haugen, "Current Concepts of Pain Process," *Journal of Chronic Diseases,* IV (July, 1956), 4-10; L. C. Kolb, "Pain as a Biosocial Phenomenon," *Connecticut Medical Journal* XX (Feb., 1956), 116-123; Hans Selye, *Stress of Life,* McGraw-Hill Book Co., New York, 1956; Edward Weiss and O. Spurgeon English, *Psychosomatic Medicine,* W. B. Saunders Co., Philadelphia, Pa., 1957; Harold G. Wolff, *Stress and Disease,* Charles C. Thomas, Springfield, Ill., 1953; Harold G. Wolff and Leo W. Simmons, *Social Science in Medicine,* Russell Sage Foundation, New York, 1954.

2. For other publications reporting research on the inductee sample, see S. H. Croog, "Relation of Plasma Pepsinogen Levels to Ethnic Origins; Implications in Duodenal Ulcer," *United States Armed Forces Medical Journal,* VIII (June, 1957), 795-801; A. Damon, "Constitutional Factors in Acne Vulgaris," *American Medical Association Archives of Dermatology,* LXXVI, (August, 1957), 172-178; F. J. Ryan, "The Relation of Performance to Social Background Factors Among Army Inductees," Ph.D. dissertation, The Catholic University of America, Washington, D.C., 1958; H. Weiner *et al.,* "Etiology of Duodenal Ulcer. I. Relation of Specific Psychological Characteristics to Rate of Gastric Secretion (Serum Pepsinogen)," *Psychosomatic Medicine,* XIX (Jan.-Feb., 1957), 1-10; P. G. Yessler, M. F. Reiser, and D. M. Rioch, "Etiology of Duodenal Ulcer. II. Serum Pepsinogen and Peptic Ulcer in Inductees," *Journal of the American Medical Association,* CLXIX (Jan., 1959), 451-456.

were classified as being in that group. In the case of the Jewish inductees, those men who reported that *both* parents were of the Jewish religion at birth were recorded as belonging to that ethnic group. The Jewish sub-sample consisted predominantly of men descended from ancestors of eastern European national origins.

Five ethnic groups were selected as the numerically largest ones in the total sample through the parental identification procedure. In order of size these were: Jewish (N = 395), Italian (N = 330), Irish (N = 245), British (N = 119), and German (N = 93). The five groups total 1,182 men, comprising an approximate 60 percent of the original research population.

The Test Instrument

The Cornell Medical Index Health Questionnaire, according to its authors, was formulated to obtain information similar to that derived in a detailed oral medical interview. A self-administered instrument, it contains 195 questions dealing with the presence of symptoms and significant items in medical, psychosomatic, and psychiatric areas. The questions are presented in simple language, and the answers are made solely as "Yes" or "No" responses. It was designed to provide the physician with supplementary data on which to base diagnostic and prognostic appraisals of the patient's total medical problem.

The Index has been given wide use, and it has been tested in various ways.[3] For instance, it has been studied as a supplement to medical interviews in aiding diagnosis, as a screening device in the armed forces, as a measure of bodily preoccupation, and as a tool for the investigation of medical complaints in relation to social variables.

Responses as Scores

Following techniques previously developed in research employing the Index, the number of "Yes" responses is utilized as a score in the analysis of relationships between questionnaire results and given variables. Thus, 30 affirmative responses would be recorded as a score of "30" for the individual. For purposes of the present study, the Index is viewed operationally as a gross approximation of significant diagnostic items which might be elicited in a medical interview.

Traits of the Sample

Since all men in the sample had recently passed through pre-induction and induction physical examinations, they can be regarded as a population with a known high-health level. Moreover, selective service procedures had resulted in a sample which was composed of men from all social levels. Screened samples of this type are ordinarily difficult to duplicate or to collect for testing outside large-scale organizations such as the armed forces. The availability of a large sample of males in their early adult years, all of whom fulfilled Army physical requirements, presents an unusual opportunity for the study of perceptions of health and illness in a normal population. However, because the men are select from the health standpoint, conclusions from the present study cannot necessarily be generalized to groups which have not been similarly screened.

The inductees were relatively homogeneous in age, with a mean age of 21.1 years. They came mainly from urban areas, with a relatively sizable percentage deriving from large cities. Approximately 42 percent of the total sample came from New York City. Less than two percent were from rural, farm backgrounds. About 80 percent of the sample came from two states, New York and New Jersey, while the remainder derived primarily from the New England states.

The ethnic composition of the sample was affected to a considerable degree by the fact that Fort Dix, New Jersey was the locus of the research project. Large concentrations of recent immigrant ethnic groups are found in the northeastern sections of the United States, the area for which Fort Dix serves as an Army induction and training center.

Results

Ethnic Origins and Cornell Medical Index

Scores for the Cornell Medical Index were subjected to statistical analysis through non-parametric tests. After the five ethnic groups had been differentiated, they were ranked according to median Cornell score. In Table 1 the median score for each group is reported, and the semi-interquartile range is presented as a measure of dispersion. As can be noted, the inductees of Italian ethnic origin recorded the highest median number of affirmative responses regarding symptoms and illnesses, while the Jewish soldiers ranked at virtually the same level. The median score for men of German ethnic origins was the lowest of the five while inductees of British and Irish origin were almost identical in median score to the inductees of German descent.

An analysis of variance test was performed, comparing the Cornell Medical Index scores for all five ethnic groups. The results were significant at the .001 level of probability, permitting the rejection of the null hypothesis that there were no differences between scores of the groups.

Through use of the Mann-Whitney U Test, a series of comparisons of group scores was carried out, matching each group with every other one.[4] The specific ratings of differences between the groups are shown as Z scores in Table 2.

3. For examples of this work, see K. Brodman *et al.*, "The Cornell Medical Index: An Adjunct to Medical Interview," *Journal of the American Medical Association,* CXL (June, 1949), 530-534; K. Brodman *et al.*, "The Cornell Medical Index-Health Questionnaire II. As a Diagnostic Instrument," *Journal of the American Medical Association,* CXLV (Jan., 1951), 152-157; K. Brodman *et al.*, "The Cornell Medical Index-Health Questionnaire III. The Evaluation of Emotional Disturbances," *Journal of Clinical Psychology,* VIII (April, 1952), 119-124; A. J. Erdmann *et al.*, "The Cornell Medical Index-Health Questionnaire V. Outpatient Admitting Department of a General Hospital," *Journal of the American Medical Association,* CXLIX (June, 1952), 550-551; K. Brodman *et al.*, "The Cornell Medical Index-Health Questionnaire VII. The Prediction of Psychosomatic and Psychiatric Disabilities in Army Training," *American Journal of Psychiatry,* III (July, 1954), 37-40; K. Brodman *et al.*, "Interpretation of Symptoms with a Data-Processing Machine," *American Medical Association Archives of Internal Medicine,* CIII (May, 1959), 776-782; M. Powell Lawton, "The Screening Value of the Cornell Medical Index," *Journal of Consulting Psychology,* XXIII (1959), 352-356.

4. For discussion of the Mann-Whitney U Test, see Sidney Siegel, *Nonparametric Statistics for the Behavioral Sciences,* McGraw-Hill Book Co., New York, 1956, 116-127.

TABLE 1

Cornell Medical Index Scores of Inductee Ethnic Groups: Median and Semi-interquartile Range

Ethnic Group	Number	Median Score	Semi-interquartile Range
Italian	330	13.5	8.9
Jewish	395	13.4	8.0
British	119	9.8	5.4
Irish	245	9.8	6.6
German	93	9.6	6.5
Total	1182	12.0	7.7

Differences between scores which were significant at a minimum level of .01 are marked by an asterisk. Absence of an asterisk indicates that no statistically significant differences were found.

TABLE 2

"Z" Scores Resulting from Comparison of Cornell Medical Index Scores of Each Ethnic Group with All Others Mann-Whitney U Test

Ethnic Group	"Z" Scores			
	German	Irish	Italian	Jewish
British	.24	.02	2.74*	2.97*
German		.15	2.60*	2.73*
Irish			3.57*	3.36*
Italian				.05

*Asterisk indicates level of significance is at least .01.

As may be noted in Table 2, the five ethnic groups appear to form into two divisions, insofar as responses to the health questionnaire are concerned. The three groups with the lowest median scores—German, British, and Irish—do not differ statistically from one another. Nor do the groups with the highest median responses—the Italian and Jewish inductees—differ from each other. On the other hand, scores for the Italian and Jewish soldiers do differ from those for the Irish, British, and German inductees in every case at a minimal significance level of .01.

Education and Cornell Score

With one exception, when the educational level of inductees within each ethnic group was examined in regard to Cornell score no significant relationship was found. The single exception discovered, however, was in the case of inductees of Italian origin for whom high Cornell score appeared to be associated with low educational level. The other group with a high median score, the Jewish inductees, did not display the same type of variation by education as did the Italians. While this finding may be related to particular characteristics of the Jewish group, it may also be a statistical artifact, since a relatively small number of men were included in the low educational category. These men, twenty-four in number, comprised only six percent of the Jewish ethnic sample.

As may be seen in Table 3, those Italian inductees who completed three years of high school or less had a median Cornell score of 19.4 items, while those who completed at least four years of high school had a median score of 12.6. The soldiers of Italian origin who attended college for one year or more exhibited a median score of 11.4. When scores for these three educational groups were analyzed using a Chi-square test, differences were found to be significant, permitting the rejection of the null hypothesis ($X^2 = 27.09$, $p<.05$).

TABLE 3

Italian Ethnic Group: Cornell Medical Index Scores: Median and Semi-interquartile Range. By Years of School Completed

Years of School Completed	N	Median Score	Semi-interquartile Range
Three Years of High School and Under	102	19.4	12.8
Four Years of High School	130	12.6	8.8
One Year of College or More	94	11.4	6.6
Total*	326	13.4	8.8

* The original Italian ethnic sample contained 330 men, but four did not satisfactorily complete questions on education.

In separate Chi-square tests, each of the three groupings of Italian inductees classified by educational level was compared with the other. Cornell Index scores of the inductees who had completed less than three years of high school differed significantly from those of the men who had attended at least one year of college ($X^2 = 20.02$, $p<.01$). Scores for the soldiers who had completed high school were in an intermediate position, in that no statistical difference was found between them and either the high or the low educational groups. However, it should be noted that in the comparison of the high school graduates with those who had completed three years or less, results were in the direction of statistical significance ($X^2 = 14.52$, $p<.10$).

Analysis of the statistical results must take into account the fact that the variable of educational level or formal schooling refers in some cases to an incomplete process. Some of the men who were drafted into the Army after completing high school would have entered college under ordinary circumstances, and they intended to do so after completing Army service. The high school graduate category shown in the table is, therefore, a composite one consisting of: 1) men who had completed their formal education and 2) those who would have been included in the college level category if the research had been carried out after they had completed their education.

The men who completed three years of high school or less represent a somewhat different set of circumstances. At the

time of the study the Army was not drafting men because of wartime emergency. Thus, there is little likelihood that men who completed three years of high school or less were required to leave school because of the draft, and there is even less likelihood that these men would later attend college. When this latter group is compared with the college-educated segment, two relatively distinct groups are being compared, and the statistical significance of differences in their Cornell Medical Index scores is particularly noteworthy.

The impact of Italian high scores upon results of comparison of ethnic groups was profound from a statistical standpoint. For instance, when the combined ethnic populations of 1,182 men were subjected to tests without regard to ethnic origins, it was discovered that differences between educational levels were statistically significant. Such a result ostensibly would seem to indicate a relationship between low educational level and a high number of medical complaints for the total population. However, when the Italian ethnic group was removed from the total sample, the significant results disappeared. The high scores among the least educated Italian inductees had served to weight the results, so far as the total sample was concerned.

Additional Social Variables and Cornell Score

In order to determine whether certain other variables were associated with Cornell score, tests of significance were performed. The following items were tested in relation to total score for the Irish, Italian, and Jewish groups: occupation of the inductee, occupation of the father, educational level of the father, and social class level of the father.[5] Negative results were obtained on Chi-square tests, and no relationship between these variables and Cornell score was found. Detailed analysis was not possible for the British and German groups, since small sample size limited the use of refined categories. These results were the consequence of two possible situations: 1) no relationships exist, or 2) the systems of testing, classification, and analysis were not sufficiently sensitive to measure the crucial phenomena.

Comments

Ethnic Origins

One clue to understanding the statistical results is that the culture or the ethnic background of the individual plays a role in his perception and expression of symptoms of illness. That certain groups or societies have developed specific values regarding appropriate responses to pain and suffering is widely known, although little empirical work has been done on the operation of these values. An early formulation of appropriate responses to pain was that of the Greek Stoics who, in following the philosophy of Zeno, held that a wise man is able to remain indifferent to both joy and suffering. The legendary ability of the American Indian to withstand pain without flinching, the "stiff upper lip" tradition among the British, and values among professional soldiers stressing the virtues of being able to bear wounds and other injuries "like a man" are evidences of group concern and interest in defining and in stipulating reactions to physical and mental suffering. While other elements may be operative in producing the differential response of the inductee ethnic samples to the Cornell Medical Index, one primary explanation may lie in the area of culturally based attitudes and expressions.

Although research on health attitudes and practices among ethnic groups in the United States is comparatively rare, some studies present data which illumine the statistical findings presented in this report. For example, Zborowski, in case studies, noted differences between Old American, Jewish, Italian, and Irish patients in a Veterans' Administration Hospital. He found that the meaning and the expression of symptoms were related to the broad social orientation and life goals of ethnic group members. Furthermore, Italian and Jewish patients tended to be more sensitive and expressive regarding their symptoms than were Irish and Old American patients.[6]

Graham, summarizing one segment of a larger study, notes that ethnic groups in a sample population in Pennsylvania differed according to the number of symptoms reported. His list included items such as shortness of breath, stomach upset, headache, and pains in bones and joints. In this study persons of Irish and British ethnic origins reported the fewest number of common symptoms, while those of Southern European origins, such as Italians and Greeks, reported the greatest numbers.[7]

Koos, in a study of a small rural community, did not deal with ethnic groups, but he found statistically significant differences in the numbers and types of significant symptoms reported by the various social classes in the community.[8]

The studies cited here differ in their methodology and in the nature of their samples, but their results are highly suggestive in their implications regarding the impact of culture upon the perceptions and reporting of symptoms.

Educational Level

The findings in regard to educational level and Cornell score differ in part from results obtained by other research workers. Brodman *et al.*, having administered the Cornell Medical Index to a sample of hospital patients, conclude that the number of medical complaints is not related to the amount of schooling.[9] These authors did not present an analysis in terms of ethnic origins. Results in the present study, therefore, are in agreement with the Brodman results with regard to the total sample, exclusive of the Italian inductees, but they differ when the Italian ethnic group is considered. Zborowski's findings in his study of the responses of four ethnic groups to pain may be relevant to the present case of the Italian inductees.[10] On the basis of case studies, he concludes that while the most highly educated patients in his sample were more sensitive to the meaning of symptoms than the less educated

5. The systems of classification of occupation, educational level, and social class developed by August B. Hollingshead of Yale University were utilized in this analysis. The author is grateful to Professor Hollingshead for permission to use these materials.

6. Mark Zborowski, "Cultural Components in Response to Pain," *Journal of Social Issues,* VIII (1952), 16-30.

7. S. Graham, "Ethnic Background and Illness in a Pennsylvania County," *Social Problems,* IV (July, 1956), 80.

8. E. L. Koos, *The Health of Regionville,* Columbia University Press, New York, 1954, pp. 32 ff.

9. K. Brodman *et al.*, "The Cornell Medical Index-Health Questionnaire VI," *Journal of Gerontology,* VIII (July, 1953), 339-342.

10. Zborowski, *op. cit.*

ones, they were not as expressive or free in reporting symptoms.

The meaning of results in regard to educational level within the Italian group cannot be defined without access to further evidence, but certain lines of exploration may be profitable in future studies. It is likely that factors related to educational achievement in this group are significant, rather than that the time spent in school in itself produces changes in attitudes toward illness. The processes of acculturation and social mobility may play a part in the present results, for example. Limitations imposed by sample size precluded statistical testing, but there were leads in the data offering insight into the roles of acculturation and social mobility in influencing Cornell Index scores.

The majority of Italian inductees were of relatively recent immigrant origin. Eighty-eight percent reported that all four of their grandparents were born in Italy, while 35 percent recorded that both their parents were born in Italy. Seventy percent of the fathers of the inductees were employed as skilled workers or as semiskilled or unskilled laborers. Moreover, 71 percent of the men reported that their fathers completed eight years of school or less. It can be hypothesized that as upward mobile sons obtain college educations, they adopt views and attitudes toward illness different from those held by Italian inductees who are less socially mobile than they. As the college men became acculturated to American society and American standards, they change some of their value orientations and loosen their reliance on traditions which are held by Italians from social environments similar to those in which their fathers and grandfathers originated.[11] The possible relationships between acculturation processes and attitudes toward illness might profitably be subjected to empirical tests.

Implications

While dealing with specific questions of test results and ethnic origins, the research has implications in several areas. Factors which lead people to obtain medical care, which affect their perceptions and responses to therapy, and finally, which determine the later subjective evaluation of the effectiveness of treatment all have roots in how an individual perceives and expresses his symptoms. The exploration, therefore, of differences between ethnic groups in their attitudes toward illness would seem of value to persons engaged in medical or dental practice, to hospital institutions in which care is provided, and to workers engaged in surveying the incidence of types of illness in the general population. For similar reasons, efforts to determine differences between social classes, regional or sectional groups may prove of both theoretical and practical value.

For example, if the present findings are validated and expanded by future research, the doctor who is aware of ethnic or educational differences in response to types of symptoms may be aided in evaluating and handling the therapy of patients with reference to their backgrounds. Knowledge of group differences, furthermore, may be useful in organizations requiring the diagnosis and therapy of large numbers, as in sick call in the armed services, clinics for low cost medical care, industrial clinics, and other cases where the patient's own conception of his illness has consequences for the functioning of organizations. Knowledge of differences of perceptions of symptoms may be useful to public health workers engaged in stimulating segments of the population to obtain care or diagnosis, as in programs for chest x-rays, blood tests, and urine tests for diabetes.

The findings in the present study, however, represent only an exploration into an area of group reactions to illness and symptoms. Although the discussion has rested on an assumption of culturally induced differences in interpretation of relatively similar health status, the influence of differential response to language cues and of real differences in the health of the inductees cannot be entirely ruled out. Further work in the same area should be performed to determine whether the results will be repeated with other samples, or whether illusory factors such as the structure of the sample, the nature of the test situation, and the design of the test instrument itself produced the findings reported. In such work a health questionnaire somewhat more refined than the Cornell Medical Index might most profitably be used.

In addition, future studies might explore the effects of acculturation upon ethnic attitudes, as the process of integration into American society continues. While the ethnic groups deriving from recent immigration will eventually alter with time, other groups with distinctive regional or social class traits will presumably continue indefinitely to provide a laboratory for the study of sociological aspects of illness.

Summary

As one procedure in their participation in a broad research project, 1,182 Army inductees from five ethnic groups completed the Cornell Medical Index, a health questionnaire which is designed to obtain data of medical and psychiatric significance. Index scores were analyzed in order to determine whether relationships would be found between ethnic origins and the health level reported by inductees.

Soldiers of Italian and Jewish ethnic origins recorded the highest median number of symptom responses. Cornell Index scores for these two groups differed significantly in statistical tests from Cornell scores for soldiers of Irish, British, and German origin. Furthermore, in the Italian group an inverse association was found between Cornell score and educational level. No association between educational level and Cornell score was found within any of the other ethnic groups under study.

The implications of differences between ethnic groups in their responses to the health questionnaire were discussed, and possible use of findings based on future research was outlined.

11. For pertinent discussion of Italian folk beliefs regarding illness, see Phyllis H. Williams, *South Italian Folkways in Europe and America*, Yale University Press, New Haven, Conn., 1938, especially pp. 160-182.

The Social Itinerary of Technical Change: Two Studies on the Diffusion of Innovation

Elihu Katz*

Rapid social and technical change is the hallmark of modern, urban society. The last few years, for example, have seen an upturn in the birth rate; an invasion of small, foreign-made automobiles; the triumph of the hula hoop; the rise and fall of the sack dress; the widespread acceptance of antibiotics and tranquillizers; and so on. Despite all of this, there are surprisingly few studies of the diffusion of innovation in the sense of tracing the movement of: 1) a given new practice; 2) over time; 3) through specific channels of communication; 4) within a social structure. This is all the more remarkable given that one would be hard put even to define various fields of behavioral research without reference to the process of diffusion. Marketing, for example, obviously, has to do with the diffusion of products; anthropology has to do with the transmission and change of culture; sociology is concerned, among other things, with the consequences of technical change, or with the spread of fads and fashions. Yet, these additions have tended to ignore the itinerary of change in the sense in which the diffusion process is defined above.

The aim of what follows is to compare two studies which have made a start in this direction. The one, by Bryce Ryan and Neal Gross, is a study of how hybrid seed corn gained acceptance among farmers in two Iowa communities;[1] the other is a study of how doctors in four communities responded to the availability of a new "miracle" drug.[2] Despite the seeming difference between a new seed and a new drug, and between farmers and doctors, the two studies will be seen to be comparable at many points, with respect both to research design and research results.

These studies also represent a noteworthy convergence of two traditions of social research which have had virtually no contact with each other. The hybrid-corn study is one of the earliest products of that branch of rural sociology which has concerned itself—for the last fifteen or so years—with the study of factors affecting the acceptance of new practices recommended to farmers for adoption. The drug study stems, ultimately, from the tradition of research into the effects of mass communication.[3] The two traditions have in common a concern with what has been called "campaigns"—attempts, in the short run, to change opinions, attitudes, and actions.[4] In this sense, a voting campaign, or a campaign to reduce prejudice, or a marketing campaign are similar to the campaign of an agricultural experiment agency to persuade farmers to adopt some innovation. Yet, despite this similarity, the two traditions have shown little interest in each other. The key to

* Elihu Katz is in the Department of Sociology at the University of Chicago and is a partner to James Coleman and Herbert Menzel in one of the two studies which are introduced for comparison here. The issues which have arisen out of this joint preoccupation constitute much of the framework for what follows. In addition, the article has benefited from the critical reading and suggestions of these associates as well as those of Bryce Ryan and Neal Gross, the authors of the second study. The advice of C. Arnold Anderson, Benjamin D. Paul, Everett M. Rogers, and Samuel Stouffer is also gratefully acknowledged. The Social Science Research Committee of the University of Chicago and the Foundation for Research on Human Behavior have contributed to the support of an inventory of research on the diffusion of innovation of which this article is a by-product.

1. Discussion of this study will be based on the journal article reporting some of the central findings and, particularly, on the later, more comprehensive report. These are, respectively, Bryce Ryan and Neal Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," *Rural Sociology,* VIII (March, 1943), 15-24, and Ryan and Gross, *Acceptance and Diffusion of Hybrid Seed Corn in Two Iowa Communities,* Iowa State College of Agriculture and Mechanic Arts, Bulletin 372, 1950.

2. A book by James Coleman, Elihu Katz, and Herbert Menzel, tentatively titled *Doctors and New Drugs,* The Free Press, Glencoe, Illinois, is in preparation. Published reports on the study include: Menzel and Katz, "Social Relations and Innovation in the Medical Profession: The Epidemiology of a New Drug," *Public Opinion Quarterly,* XIX (Winter, 1955-56), 337-352, a report on the pilot study; Menzel, "Innovation, Integration and Marginality: Facts and Problems from a Survey of Physicians," *American Sociological Review,* forthcoming; Menzel, Coleman, and Katz, "Dimensions of Being 'Modern' in Medical Practice," *Journal of Chronic Diseases,* IX (January, 1959), 20-40; Coleman, Katz, and Menzel, "The Diffusion of an Innovation Among Physicians," *Sociometry,* XX (December, 1957), 253-270; and Coleman, Menzel, and Katz, "Social Processes in Physicians' Adoption of a New Drug," *Journal of Chronic Diseases,* IX (January, 1959), 1-19. An important part of the substantive material is contained in the latter two articles while other parts are available only in unpublished research reports of the Bureau of Applied Social Research, Columbia University.

3. For a discussion of the sequence of studies which contributed to the formulation of the drug study, see Elihu Katz, "The Two-Step Flow of Communications: An Up-to-Date report on an Hypothesis," *Public Opinion Quarterly,* XXI (Spring, 1957), 61-78.

4. This point is developed in Elihu Katz and Paul F. Lazarsfeld, *Personal Influence: The Part Played by People in the Flow of Mass Communication,* The Free Press, Glencoe, Illinois, 1956, pp. 15-25.

the vast gap which has separated them is, surely, the different images of society which they have held. Mass communications research has tended to envision society as an audience of isolated individuals, hooked-up to the mass media but not to each other. Indeed, the mass media are the very symbols of the atomized mass society. Rural sociology, on the other hand, conceives itself as being located near the opposite end of the "Gemeinschaft-Gesellschaft" continuum.

Very recently, however, mass communications research has begun to revise its image of the audience. A series of studies in the last few years has revealed not only that modern, urban society is not as individuated as had once been assumed but that the connections among family members, colleagues, and the like, have an important share in the communications process.[5] It is this concern with interpersonal processes which is beginning to forge a link between the two traditions of communications research being considered here.[6] Nevertheless, the drug study was completed only a few years ago without any real awareness of its many similarities to the study which had been undertaken by Ryan and Gross almost fifteen years before.

This article has two parts. The first part is concerned with the *design* of the two studies. It is an attempt to illustrate the research strategies which are appropriate to research on the diffusion of innovation, and the main variables which must be taken into account. The second part of the article compares some of the *findings* of the two studies.

The Design of the Two Studies

The design of the two studies can be compared most usefully, perhaps, with respect to the basic elements already enumerated: 1) a given new practice; 2) time; 3) channels of communication; and 4) social structure. Each of these elements will be considered in turn.

A Given New Practice

Each study concentrated on a single new product. Hybrid corn seed emerged from its experimental stage in 1927 and had been almost universally adopted ten years later in the two communities studied. Gammanym, the newest member of a family of modern "miracle" drugs, became available to physicians in the early 1950's and achieved almost total acceptance in less than two years.[7]

The two products are far more comparable than they might appear to be. First of all, they both came *highly recommended* by competent scientific authority. They are both of *central importance* to the groups for whom they were intended. What is more, both seeds and drugs are the sorts of products whose effects can be measured with a rational yardstick which enables users to *see for themselves,* more or less, whether the innovation serves better than its predecessor. This is quite different from, say, fashion changes in clothing.

Another characteristic shared by hybrid corn and gammanym is that both could be accepted in *installments.* A farmer, for example, could experiment with the new hybrid seed in a small fraction of total corn acreage, just as a doctor could decide to try gammanym, initially, on only one or two patients. This is quite different, obviously, from take-it-or-leave-it innovations, like an air conditioner or a new car.

Still another important similarity between the two innovations is that both were essentially modifications of products with which farmers and doctors, respectively, had had considerable experience. Adoption of these innovations, then, required only relatively minor—but still not insignificant—changes in patterns of thought and action. Contrast these "substitute" products, for example, with the study of a "campaign" waged in a rural Peruvian community to gain acceptance of the ostensibly simple practice of boiling water before drinking it, where acceptance required a radical change in the traditional concepts of health and illness as well as a change in the rhythms of food preparation and of work within, and outside, the household.[8]

The two innovations share still other similarities. One of the most important of these has to do with the fact that differentials in wealth, or in *economic profitability,* do not seem, *a priori,* to be of major relevance in determining response to the innovation. In the case of hybrid corn, Ryan and Gross explain that no farmer cited the price of seed as a reason for delaying adoption of the innovation, nor was there any reason to believe that the increased return from hybrid corn would be disproportionately greater for operators of larger farms than of smaller ones.[9] In the case of gammanym, of course, it is the patient, not the doctor, who pays for the drug and thus doctors might all be expected to be equally likely to be the first to try the new drug.

This is not to say that there are no differences between the two products, or that the above enumeration necessarily catches up the most crucial dimensions. It can only be surmised that some of these dimensions—plus others like them—may well affect diffusion patterns. It is clear, at any rate, that any attempt to develop a comparative study of diffusion must incorporate a more systematic "content analysis" of the variable characteristics of innovations. Moreover, this must be done "functionally"; that is, the innovation must be char-

5. Reviews of some of these studies may be found in Katz, "The Two-Step Flow . . .," *op. cit.* and in John W. and Matilda W. Riley, "Mass Communications and the Social System," in Robert K. Merton *et al.* (eds.), *Sociology Today,* Basic Books, New York, 1959.

6. See Elihu Katz, "Communication Research and the Image of Society: The Convergence of Two Traditions," *American Journal of Sociology,* LXV (March, 1960), 435-440.

7. The name gammanym is a pseudonym.

8. Edward M. Wellin, "Water Boiling in a Peruvian Town," in Benjamin Paul (ed.), *Health, Culture, and Community,* Russell Sage Foundation, New York, 1955.

9. "While it would be difficult to place a date at which the perfectly rational man would have adopted hybrid seed, under the assumptions of classical economic theory, the adoption date would have been practically the same for all operators. That is, variations in the rational desirability of the seed between farmers were at a minimum—the trait was economically advantageous to all, and to much the same degree." Ryan and Gross, *op. cit.,* 670. On the other hand, an economic analysis of time differentials in the diffusion of hybrid corn *between* different areas of the country (rather than *within* an area) shows that the "profitability" of the shift from open-pollinated to hybrid is highly associated with the rate of acceptance. See Zvi Griliches, "Hybrid Corn: An Exploration in the Economics of Technological Change," *Econometrica,* XXV (October, 1957), 501-522.

acterized with respect to the patterns of thought and action of the people to whom it is directed.[10]

Time

The second element of the diffusion process in terms of which the two studies may be compared is the element of time. In both studies, "acceptance" of the innovation was operationally defined as initial use of any amount of the product.

Notice that both studies *can assign a date* to initial acceptance and that it is the element of time, perhaps more than any other, which makes the study of diffusion possible. In the case of the farmers, the year of first use of the new seed was determined by asking the farmer. In the case of the doctor, this was done by means of an audit of prescriptions on file in all pharmacies in the four communities which were studied. The month in which each doctor's earliest gammanym prescription appeared was counted as the date of his "acceptance" of the new drug. Thus, the drug study had the unique opportunity of obtaining an *objective* measure of past performance by virtue of the availability of the written record of prescriptions, while the hybrid corn study relied on *subjective* recall.[11] But, what is of fundamental importance is that both studies devised a method of measuring time; this is the major key to their comparability.

Channels of Communication

Both studies rely, at least in part, on the respondent's own ability to "reconstruct" the sequence of factors which influenced his decision. Yet, it is by no means clear how much trust can be placed in this ability—particularly when it concerns a decision which was made months, sometimes years, before. Essentially, then, there are two methodological questions which both studies confront at this point: 1) Whether respondents are at all capable of reconstructing the elements which go into the making of their decisions; and if so, 2) whether there is not a time limit on this ability.

Again, the hybrid corn study places more faith in respondents' testimony than does the drug study. Ryan and Gross say only that:

> . . . the channels through which farm operators first learned of the new seed were undoubtedly more complex than the farmers themselves realized.

But they deal with them at face value nevertheless. And, in fact, a number of their findings with respect to farmers' use of the channels of communication have been corroborated by other studies.

The drug study, on the other hand, is much more skeptical. More explicitly than the hybrid corn study, the drug study makes an attempt to use more objective means to uncover the relevant influences operating on the decision to adopt gammanym. Along with the respondents' own testimony as to what influenced them, that is, the drug study analyzes variations in time of adoption as a function of the channels of communication to which respondents are *generally* exposed. This is a step backwards, in one sense, since the correlation between, say, amount of journal reading and time of adoption raises problems of interpretation which need not be raised in the case of subjective retrospection. Similarly, it is impossible to get at the *sequence* of media-use by means of this method. On the other hand, however, despite the added risks of inference-making, there is reason to believe that this method produces results which would otherwise go undetected.[12]

Among the channels of communication are included such impersonal media as journals, direct mail advertising, and the like, and such personal ones as salesmen and colleagues. As has already been pointed out, both studies made special provision for taking account of the possible influence of neighbors and colleagues in the decision to adopt.

Social Structure

Social structure figures in a variety of different, although interrelated, ways in the sociological study of diffusion. Most basic, perhaps, is the fact that social srtuctures serve as boundaries within which innovations spread. Thus, one can compare the extent or the speed or the sequence of penetration of a given innovation within different neighborhoods, or social classes, or adolescent gangs.[13] Differential rates of penetration can then be accounted for in the light of other elements which distinguish among social structures; social norms, for example, or different degrees of social integration, or status variations within some larger social structure.

10. Suggestive attempts to classify innovations in this way have been made by a number of authors. See, for example, Homer T. Barnett, *Innovation*, McGraw-Hill, New York, 1953; E. A. Wilkening, *Acceptance of Improved Farming Practices in Three Coastal Plains Communities*, North Carolina Extension Service Technical Bulletin No. 98, Raleigh, North Carolina, 1952; E. E. Emery and O. A. Oeser, *Information, Decision and Action*, University of Melbourne Press, Melbourne, Australia, 1958; and Herbert Menzel, "Innovation, Integration and Marginality," *op. cit.*

11. The drug study also asked doctors, during the course of the interview, to recall the date of their first use of gammanym, and the discrepancies between the objective and subjective information were analyzed. The data reveal that doctors erred in both directions, but the marked tendency of most doctors was to report themselves as having adopted the new drug considerably earlier than they actually did. Nevertheless, despite the tendency to "update" themselves, there is a positive correlation between the adoption dates obtained from the doctors and from the prescription record. See Menzel, Coleman, and Katz, "Dimensions of Being 'Modern' . . ." *op. cit.* Although it is probable that farmers also have faulty memories, given that corn is their most important crop and that they were asked to name the *year* of first use, it may be that their errors are smaller than those of the doctors. On the other hand, the farmers were interviewed long after most of them had begun using hybrid corn, thus increasing the chance of error.

12. Ryan and Gross employ this kind of correlational analysis, too. For example, they inquire concerning reading habits in much the way the drug study does and they find, as the drug study does, that early and late adopters are noticeably different in their communications behavior. Their tendency, however, is to interpret such results as if they were part of the set of factors predisposing respondents to early or late adoption, rather than direct influences on the specific decision being studied. The drug study does this and more; it tries in certain instances, to establish a causal link between exposure to certain media and the specific decision to adopt—even though the respondent does not mention this medium in the "reconstruction" of his decision.

13. For good examples, see Stuart C. Dodd, "Formulas for Spreading Opinions," *Public Opinion Quarterly*, XXII (Winter, 1958-59), 537-554, and more impressionistically, William H. Whyte, Jr., "The Web of Word of Mouth," *Fortune* (November, 1954). The Swedish geographer Torsten Hagerstrand has mapped the spread of an innovation from urban centers to outlying districts, etc., emphasizing the role of social contacts within given localities. See, "The Propagation of Innovation Waves," *Land Studies in Geography*, No. 4, The Royal University of Lund, Lund, Sweden, 1952.

Within a given structure, of course, individuals can be differentially "located" with respect to their statuses, relative integration, or the like. One can then examine the different responses to innovation characteristic of individuals in varying structural locations.[14]

Finally, social structures may also be seen as networks of interpersonal communication and, in this sense, obviously, the concern for channels of communication and for social structure coincides. Given this kind of social network, that is, one would want to trace the social itinerary of an innovation as it proceeds over time.[15] A child may not be able to "reconstruct" how he got the measles, but locating children with respect to their social structures—schools, friendships, community centers, etc.—will provide a good picture of the process of "social contagion," the relevant networks of communication within a structure and the comparative importance of different structures (school vs. community center, for example.)

Rather than interview a random sample of doctors, it was decided, in the drug study, to interview *all* doctors for whose practices the new drug was relevant. In addition to the usual questions concerning personal attributes, attitudes, communications behavior, etc., each doctor was also asked to name: 1) his three best physician friends; 2) the three or four physicians with whom he most often finds himself discussing cases or therapy; and 3) the colleagues on whom he most frequently calls when in need of special information or advice on questions of drug therapy. Thus, each doctor could be located with respect to the structures of friendship, case discussion, and advice, and within each of these structures, the doctor could be rated in terms of: 1) his relative integration or popularity —that is, *how many* of his colleagues designated him, and 2) his particular network of association—that is, *which* of his colleagues named him. Thus, sociometry provides one means for mapping the structure of interpersonal relations in order to determine their impact on individuals occupying different positions within them and to examine their role as potential paths for the flow of innovation.

The hybrid corn study also interviewed all the members of the two communities which were studied. But there is no sign that this aspect of the research design was put to use in determining the structure of social relations. Instead, information was simply collected from all community members as if they were unrelated respondents in a random sample. Attempts to map individual location within the social structure were made in more conventional ways. Respondents were asked to indicate the organizations to which they belonged, the extent of their contacts outside the community, the number of neighbors whom they visited, etc. Nevertheless, the authors of the hybrid-corn study are keenly aware of the potential relevance of social relational variables and, indeed, explicitly regret not having designed adequate measures of social participation:

> . . . due mainly to the great difficulty in devising them.[16]

The Findings of the Two Studies

Having noted the similarities in the design of the two studies, let us now compare some of the findings. This second section of the article will be concerned with the extent to which the empirical generalizations emerging from one study find support in the other. For, in a very real sense, these studies may be viewed as replications of each other.

We will proceed, point by point, to analyze their similarities and differences. But it will become apparent readily that there is a theoretical thread which connects these diverse points; it is a concern for the processes of interpersonal influence which figured so prominently in the diffusion of these two innovations.

1. *The Rate of Diffusion*

If the cumulative proportion of acceptors of hybrid seed is plotted over the ten-year period from its earliest adoption to the time when virtually all community members had tried it, the curve is S-shaped, indicating that: 1) there was an early period of adoption when a few pioneering farmers gradually tried the innovation; 2) a rapid middle period when many people adopted close upon each others' heels and 3) a late period when even the die-hards gradually accepted. The S-shaped curve has been associated traditionally with diffusion phenomena and has been assumed to imply not only that there are characteristic stages in the diffusion process but, more important, that there is intercommunication among the population of adapters. Such curves suggest, that is, that the fact that others have adopted is itself a source of influence making for further adoption. For example, if the "pioneers" who adopt an innovation immediately upon its appearance each tell their friends about it, and these friends subsequently tell their friends, and so on, the resulting curve of diffusion would look something like the curve in Figure 1.

Ostensibly, the curve of diffusion of gammanym (Figure 2) looks different. It shows that there was a rapid spurt of adoption in the months immediately following the release of the new drug which is described by the steep, nearly straight

14. See Public Administration Clearing House, "Experiences of Personnel of U.S. Voluntary Agencies," *Economic Development and Cultural Change,* II (June, 1954), 29-349. This presumes that group norms bind the more integrated members of a group more than the more marginal members and, hence, that group leaders are the most conformist members of their groups. For evidence concerning the relevance of this hypothesis for response to innovation, see C. Paul Marsh and A. Lee Coleman, "Group Influences and Agricultural Innovations: Some Tentative Findings and Hypotheses," *American Journal of Sociology,* LXI (May, 1956), 588-594.

15. Several studies have proceeded from a sociogram of friendship to map the flow of rumor. See Jacob L. Moreno, *Who Shall Survive,* Beacon House, Beacon, New York, 1953, pp. 440-450; Leon Festinger *et al., Social Pressures in Informal Groups,* Harper, New York, 1950, Chap. 7; Back *et al.,* "A Method for Studying Rumor Transmission," in Leon Festinger *et. al.,* (eds.), *Theory and Experiment in Social Communication,* Research Center for Group Dynamics, University of Michigan, Ann Arbor, Mich., 1950. In the field of rural sociology, the most intensive analysis of the process of information diffusion within and between informal social structures has been the work of H. F. Lionberger. See, especially, Lionberger and Coughenor, *Social Structure and Diffusion of Farm Information,* Agricultural Experiment Station, College of Agriculture, Research Bulletin 631, University of Missouri, Columbia, Missouri, 1957, and the articles on this study in *Rural Sociology,* XIX (September and December, 1954), 233-344, 377-384.

16. Ryan and Gross, "Adoption and Diffusion . . .," *op. cit.,* 707, footnote 62.

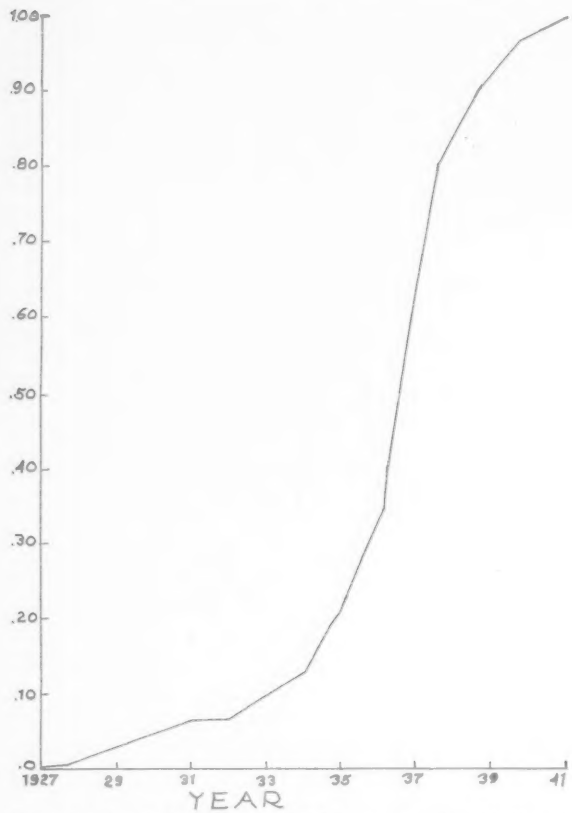

FIGURE 1: Cumulative percentage of farmers accepting hybrid seed during each year of the diffusion process. (Adapted from Bryce Ryan and Neal Gross, *Acceptance and Diffusion of Hybrid Seed Corn in Two Iowa Communities*, p. 672).

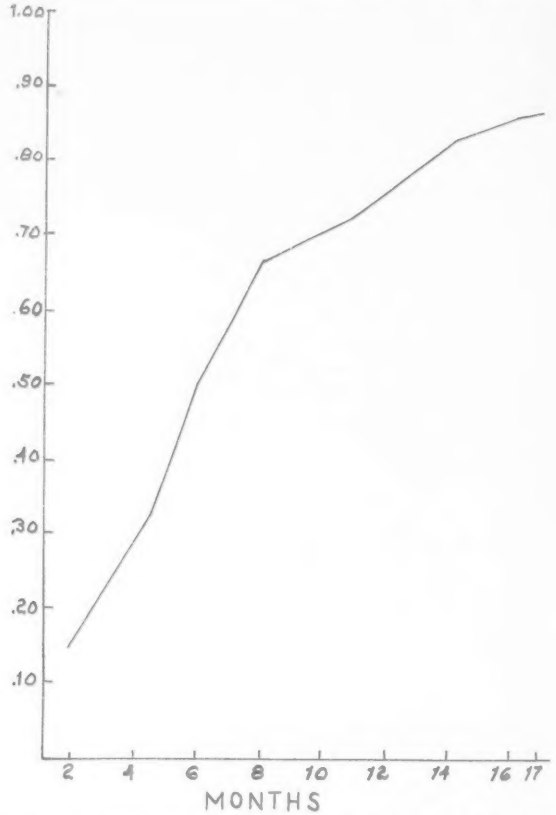

FIGURE 2: Cumulative percentage of doctors accepting gammanym in the communities studied over a 16-month period (N=125).

line reaching until the eighth month, during which period about two-thirds of the doctors wrote their earliest prescriptions. The curve tapers off thereafter and in the remaining eighteen months another twenty percent of the doctors began using it, bringing the cumulative total of doctors who had tried the new drug to about ninety percent. It is fairly clear that this curve lacks the tentative phase characteristic of the early days of hybrid corn. Perhaps this difference between the two curves reflects the greater conservatism of Iowa farmers as compared with the doctors.

What is really important about these two curves is not at all accessible to the naked eye. For, despite manifest differences between them, the fact is that the drug study provides strong support for what the corn study could only hypothesize: that interpersonal networks of communication have an important share in the diffusion process. This can be seen in Figure 3 where the cumulative curve of gammanym diffusion is plotted *separately* for different groups of doctors, classified according to the number of choices they received as friends.

Compare the two extreme curves. The curve for the most "integrated" doctors continues steeply upward almost to reach its peak in the eighth month, while the curve for the "isolated" doctors rises at a constant rate. What is interesting about this is the fact that the curve for the "integrated" doctors can be closely approximated by a "chain reaction" model which grows as a function of the number of doctors who have already adopted. On the other hand, if one postulates a curve made up of a sequence of individual adoptions uninfluenced by interpersonal communication, one would approximate the curve actually obtained for the "isolated" doctors. This latter curve might result, for example, from some constant stimulus—say, advertising—operating each month so as to influence a constant proportion of those who have not yet adopted. This would be the case, for example, if fifteen percent adopt during the first month, and fifteen percent of those remaining do so in the second month, and so on.[17] Unlike the social process of adoption, those who adopt

17. These matters are more fully, and somewhat more technically, discussed in Coleman, Katz, and Menzel, "The Diffusion of an Innovation . . .," *op. cit.*, 256-262. This article also presents theoretical curves alluded to here. Note that only the factors associated with relative integration behave in this way. The curves which distinguish doctors who read many journals also distingiush between early and late adopters, but the slopes of the two curves are quite parallel. See the discussion in Coleman, Menzel, and Katz, "Social Pressures in Physicians' Adoption . . .," *op. cit.*, 13.

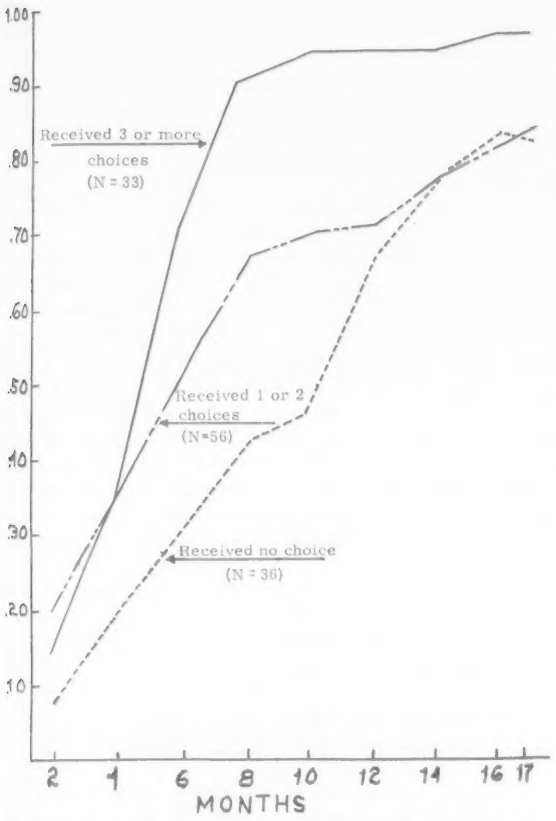

FIGURE 3: Cumulative percentage of doctors accepting gammanym over a 16-month period by number of friendship choices received.[18]

in any given month are uninfluenced by those who adopted before they did.

In other words, the drug study argues that the curve of gammanym adoption is really made up of two quite different curves. One of these—that of the "integrated" doctors—resembles the S-curve of diffusion of hybrid corn in that both curves can be approximated by theoretical models based on the assumption that diffusion is a product of interpersonal influence. Thus, doctors who are close to their colleagues are, by the same token, also integrated into a powerful network of communication. Doctors who stand outside these relationships are apparently more individualistic (and slower) in their innovating behavior as well.

Diffusion curves are made possible by taking account, in the research design, of time-of-adoption and of social structure (in the sense of setting social boundaries in terms of which diffusion is to be observed). The design of the drug study also called for classifying individuals in terms of relative integration in the social structure. Given these ingredients, it becomes possible to make *inferences* concerning the overall importance of interpersonal influence in the diffusion process and its differential importance for individuals who are differentially "located."

2. *Innovation on the Installment Plan*

Further evidence concerning the role of interpersonal influence can be inferred from a comparison of the degrees of caution exercised by early and late adopters in their initial trial of the innovation. It has already been noted that both hybrid seed corn and gammanym were not all-or-none innovations. You either purchase an air conditioner or you do not; you cannot begin with one part of an air conditioner, then slowly add more parts if it satisfies you. But farmers could do essentially just that with hybrid seed, and doctors could do it with gammanym. Planting hybrid in a certain percentage of his corn acreage or prescribing gammanym to a certain percentage of his patients, could constitute a sort of experimental trial for each innovator; then, if he were satisfied, he could add more.

This is, in fact, what happened. No farmer planted all of his corn acreage to hybrid in the year he began with the new seed. What is more, as Table 1 reveals, the earliest adapters were extremely conservative in the percent of their acreage planted to hybrid during the year of their initial adoption.

TABLE 1

Median Percent of Total Corn Acreage in Hybrid By Year of First Use

First Use	Percent of Acreage in Hybrid During First Year
pre-1934	12
1934	20
1935	8
1936	20
1937	19
1938	25
1939	30
1940	69
1941	54

Adapted from Ryan and Gross, *Acceptance and Diffusion of Hybrid Seed Corn in Two Iowa Communities*, Table 3, p. 680.

Something very similar seems evident among the doctors. By classifying doctors according to the date of their earliest prescription for gammanym and examining the number of gammanym prescriptions written by each doctor during the three-day period which includes his earliest prescription, it is possible to see whether the earliest doctor-innovators, like the farmer-innovators, are more conservative in the extent to which they adopt the innovation. The parallel is evident from Table 2.

Doctors whose initial prescriptions for gammanym appeared in the earliest prescription sampling period (one to two months following the release of the new drug) wrote an average of only 1.5 gammanym prescriptions during the three-day period while those who began in the following two

18. These figures have been corrected for seasonal variations in the general level of use of drugs of the gammanym type. The method employed to make these corrections will be discussed in the Appendix to the forthcoming volume by Coleman, Katz, and Menzel.

TABLE 2

Average Number of Earliest Gammanym Prescriptions by Month of First Use

Number of Months Between Release of Gammanym and Month of First Use	Average Number of Earliest Prescriptions (3-day period)
1-2 months	1.5
3-4 "	2.0
5-6 "	2.7
7-8 "	2.6

months averaged 2.0 prescriptions, and so on. In other words, the innovators, measured by *time* of adoption, seem to be conservative in the *degree* of their first use of the innovation, while those who are conservative in time of adoption appear to be bolder in their degree of first use.

This finding of the two studies suggests that later adopters could depend, in part, on the accumulated experience of the innovators. Ryan and Gross put it this way:

> In a sense, the early acceptors provided a community laboratory from which neighbors could gain some vicarious experience with the new seed over a period of years.[19]

Thus, again—and from quite a different perspective—the empirical findings of the two studies appear to point to the relevance of interpersonal relations for the diffusion of innovation.

3. *Information Is Not Enough*

So far, we have been reporting essentially behavioral data relating to time-of-adoption, to relative integration, and to extent of first use of the two innovations. From these data, inferences have been drawn concerning the workings of interpersonal influence in the diffusion process. Now we turn to the respondents' own testimony concerning their communications behavior. That part of the research design which is concerned with the channels of information and influence becomes relevant here.

One of the first questions which deserves to be asked in this connection is whether later adopters adopted late *for lack of knowledge* concerning the existence of the innovation. The evidence of both studies points to a negative answer to this question.

Ryan and Gross distinguished in their interviews between the diffusion of information and the diffusion of adoption. They asked farmers to indicate the year in which they first heard of the new seed along with the year in which they first adopted it. While they found that it took about thirteen years for news of the innovation to reach every single farmer, the spread of knowledge was, in fact, highly concentrated during a three-year period when sixty percent of the farmers learned about it. Perhaps the important fact, for the present purpose, is that while over ninety percent of the farmers had heard of the new seed by 1934, less than twenty percent had tried it by then.

The data from the drug study point in the same direction, although they are less vivid. The time gap between hearing and adopting was necessarily much smaller among the doctors, since the drug was almost completely accepted in the communities studied less than two years after it was announced. The curve of adoption follows the curve of hearing much more closely among the doctors than among the farmers. Nevertheless, particularly during the early months following the release of gammanym, there is a substantial difference between the proportion of doctors who had heard of it and the proportion who had tried it: About two-thirds of the doctors date their earliest knowledge of the drug to within four months of its initial availability, but only about one-third of the doctors actually adopted it during this period. In later months, however, the cumulative curve of adoption and the cumulative curve of hearing move much closer together and roughly parallel each other. In the case of the farmers, it appears that almost everybody knew before almost anybody had adopted, so that information does not even begin to explain the difference between early and late adopters. In the case of later-adopting doctors, however, adoption came relatively soon after obtaining information.[20]

Nevertheless, there is a key piece of evidence which establishes that mere information did not constitute a sufficient basis upon which a doctor would decide to adopt, just as it was not sufficient for a farmer. The evidence is the fact that only about ten percent of the doctors reported that they had adopted gammanym after hearing about it from the source of information which brought them their first news of the new drug. In "reconstructing" the sequence of sources of information which had bearing on their decision to adopt, that is, doctors invariably named at least two, and usually three or four, such sources.

In other words, it seems reasonable to conclude that the availability of information that an innovation exists is not enough to make for its adoption. Additional factors must be sought, therefore, to explain both the decision to adopt as well as differentials in time of adoption.

4. *The Impact of Various Influences on the Decision to Adopt*

Ryan and Gross report:

> Throughout Iowa, the spread of information about hybrid seed became a major educational campaign in the thirties for both public and private enterprises. . . . Behind the hybrid movement lay not only the rational

19. Ryan and Gross, *op. cit.*, 681.

20. This is somewhat surprising in view of the fact that the drug company salesmen blanket a medical community quite early, and quite thoroughly, upon the appearance of a new drug. For this and other reasons, it seems likely that physicians knew about the drug earlier than they actually reported having heard about it. If this is true, it suggests that, whereas there is a tendency on the part of physicians to report an earlier date for actual use of the drug, there may be a tendency to report a later date for hearing about it so that the gap between hearing and action is shortened. This has not yet been looked into carefully and, of course, is difficult to check. For the moment, the data appear to imply that later adopters also heard about the drug later.

appeals and authority of research and governmental agencies, but also the initiative and ingenuity of private business interests.[21]

Almost one-half of the farmers indicated that a salesman brought them their first information about the new hybrid corn, as Table 3 indicates. The second sources of influence in degree of importance were farmer-friends and neighbors.

TABLE 3

Original Sources of Knowledge of Hybrid Seed and Most Influential Sources

	Per Cent of Farm Operators Crediting Source With	
	Original Knowledge	Most Influence
Salesmen	49%	32%
Neighbors and Relatives	18	50
Farm Journals	11	2
Radio Advertising	10	—
Extension Service	3	2
All Other Media	9	14
Total Farmers (100%)	(257)	(257)

Adapated from Ryan and Gross, *Acceptance and Diffusion of Hybrid Seed Corn in Two Iowa Communities*, Table 5, p. 682.

The drug company salesman was no less important for the doctor than the seed company salesman was for the farmer. Altogether, fifty-seven percent of the doctors indicated that the "detail man" had brought them their first information about gammanym. The only other source of any importance as a source of *first* news was direct mail from the drug company which accounts for eighteen percent of the doctors. Much less frequently did doctors name another physician (seven percent did so), or a professional journal (also seven percent) as a source of first information. (The picture is different for later sources of information, as will soon be seen.)

Both doctors and farmers typically went on to recount several other media as having been relevant—according to their recollections—for their decision to adopt the innovation. Although neighbors were mentioned by farmer-respondents relatively late in the sequence of relevant media, when asked to evaluate the various sources in terms of their relative influence, neighbors were cited as more influential than any other medium (Table 3). Doctors, on the other hand, tended to evaluate salesmen as the single "most important" source followed by journal articles and colleagues (Table 4). But it is also clear that the commercial sources (salesmen and direct mail) lose in relative importance when source of first knowledge and most influential sources are compared, whereas sources inside the profession—journal articles and colleagues —gain.

The results of the drug study are comparable to the Ryan and Gross findings in another sense, too. This can be seen by

21. *Op. cit.*, 682.

TABLE 4

Original Sources of Knowledge of Gammanym and Most Influential Sources

	Percent of Physicians Crediting Source With	
	Original Knowledge	Most Influence
Salesmen	57%	38%
Colleagues	7	20
Direct Mail	18	8
Drug House Periodicals	4	5
Journal Articles	7	23
Meetings	3	—
All Other Media	4	6
Total Physicians (100%)	(141)	(141)

examining the sequence of channels named by the doctors as having had a bearing on their decision, as is done in Table 5 for physicians (and they were a majority) who named three sources or more.

From Table 5 it appears that, while colleagues may not be important sources of *first information* about gammanym, they become increasingly important as *later sources* which come to *add* information and to exert influence. Thus, the

TABLE 5

Sequence of Sources of Information Mentioned by Physicians in Connection with the Decision to Adopt Gammanym*

	Percent of Physicians Crediting Source With		
	Original Knowledge	Additional Information	Last Information prior to Adoption
Salesmen	52%	27%	5%
Colleagues and Meetings	13	19	36
Direct Mail	22	16	14
Journal Articles	6	21	21
Drug House Periodicals	3	11	21
Other Media	4	7	3
Total Mentions*	(87)	(131)	(87)

* The modal physician named three or more sources of information and this table includes only the 87 who mentioned three or more sources. These 87 doctors named 131 sources intermediate to their first and last sources, and thus the middle column is percentaged so that 100% = 131 source mentions.

table indicates that colleagues were, by far, the single most important "last source" of information prior to adopting the drug. Notice, too, that journal articles and drug house periodicals increase in importance over time, while salesmen and direct mail fall off. The suggestion of the table seems to be that the earliest source of information, the salesmen or direct mail, serves an *informational* role primarily but is not regarded as a sufficient basis for action. Before their decision

to adopt is allowed to crystallize, physicians turn to less commercial and more professional sources such as colleagues, journal articles, and the quality publications of the drug companies. These appear to have a *legitimating* role; they indicate whether it is safe and right to go ahead. Ryan and Gross suggest exactly this:

> Insofar as the farmers' evaluations were accurate, it may be suggested that the diffusion agencies are divisible into two moderately distinct types: those important as *introductory* mechanisms, and those important as *activating* agents. Thus, salesmen were credited with informing the majority of the operators, but neighbors were credited with convincing them. . . . The spread of knowledge and the spread of conviction are, analytically at least, distinct processes, and in the diffusion of hybrid seed have appeared to operate through different although complementary channels.[22]

Recent work by other rural sociologists lends considerable support to this joint conclusion of the two studies. In general, it has been found that mass media serve to inform and that personal contacts are used to legitimate.[23] These findings seem to indicate that it is incorrect to view the media as essentially competitive. In fact, it may be that the search for the "most influential" medium is a fruitless one. It would seem that the focus should be the different uses of the media in varying social and psychological circumstances.[24]

Thus, the direct testimony of respondents in the two studies contributes further to a picture of the workings of interpersonal influence in the diffusion process. It adds to the inferences which were drawn earlier the notion that the diffusion process is rather more dependent on interpersonal communication as a source of legitimation than as a source of information. While the farmers' "reconstructions" of the channels of communication which figured in their decisions give major credit to interpersonal influence, the doctors mention this channel rather less prominently than the earlier data might have led one to expect. (The two sets of findings are not contradictory; but there is obvious need for research on the reconciliation of "objective" and "subjective" sources of data in diffusion research.)

5. *Communication Behavior of Early and Late Adopters—Connections with the World Outside*

The next question that needs to be asked is obvious: If informal interpersonal influence is so important, who influences the influentials? Assuming, for the moment, that it is the early adopters who influence later adopters, let us begin by determining who and what influences the early adopters. Since neither hybrid corn nor gammanym originated within the communities selected for study, an answer to this question will also help to locate the channels through which these innovations were "imported."

Turning again to the testimony of the respondents themselves, it is clear, from the hybrid corn study, that the innovators differed from those who adopted later by virtue of their greater reliance on salesmen. Later adopters mention colleagues far more frequently and more prominently and, hence, the picture of a "two-step flow" of diffusion suggests itself.[25] Hybrid corn was brought to the community by salesmen who were disproportionately influential for the early adopters, and the early adopters then were the primary sources of influence for those who followed them.

Again, the case of the doctors is less clear-cut. First of all, the channels mentioned by early and late adopters in their "reconstructions" fail to discriminate between them. From their subjective accounts, it appears that everybody, early or late, is exposed to much the same sequence of sources of influence. But then what explains the promptness of the innovators? The most persuasive evidence available tends to show that connections with the outside world do, indeed, influence the early adopters. In this case, however, the evidence is not based on the doctors' subjective accounts, but rather on the correlation of some of their known habits of communication and their early or late adoption. The innovator is more likely to subscribe to larger numbers of medical journals, for example, and this is so whether he is a specialist or not. The innovator is more often to be found in attendance at out-of-town meetings of medical groups; the specialty meetings, in particular, distinguish between early and late adopters. Moreover, early adopters of gammanym: 1) visit out-of-town medical institutions and teaching hospitals more frequently than non-innovators, especially institutions at which they themselves received their training, and 2) look to a greater number of out-of-town medical institutions as sources of their medical knowledge. In short, they are more "in touch" and, hence, more up-to-date than later adopters.

Looking at the matter in this way, of course, cannot establish conclusively that more extensive contacts with the medical world outside the local community "caused" the early adoption of gammanym. It might be that keeping "in touch" is but another reflection of the same underlying pre-disposition to be up-to-date professionally as is early adoption of a highly recommended new drug. Ryan and Gross, as a matter of fact, prefer this interpretation for their very similar findings.[26] They found that the earliest hybrid adopters (23 farmers prior to 1934) reported an average of 4.3 trips to Des Moines —the nearest urban center—in the year preceding the interview, whereas the latest group to adopt (17 farmers in 1940-41) visited Des Moines only 1.5 times during the same period. Trips to county fairs, too, differentiated among the adoption

22. *Op. cit.*, 685.

23. A good example is E. A. Wilkening, "Roles of Communicating Agents in Technological Change in Agriculture," *Social Forces*, XXXIV (May, 1956), 361-367.

24. In this connection, see the new approach of George M. Beal and Joe Bohlen, *The Diffusion Process*, Iowa Agricultural Experiment Station, Special Reprint #18, Ames, Iowa, 1957; and James H. Copp, Maurice L. Sill, and Emory J. Brown, "The Function of Information Sources in the Farm Practice Adoption Process," *Rural Sociology*, XXIII (June, 1958), 146-157.

25. The history of this concept is discussed in Katz, "The Two-Step Flow . . .," *op. cit.* and its relevance for innovation in agriculture is discussed explicitly in Everett M. Rogers and George M. Beal, "The Importance of Personal Influence in the Adoption of Technical Changes," *Social Forces*, XXXVI (May, 1958), 329-340.

26. Ryan and Gross, "Acceptance and Diffusion . . .," *op. cit.* 706-707.

groups. And, like the doctor-innovators, farmer-innovators were disproportionately likely to be avid readers of agricultural experiment station bulletins and high consumers of mass media generally. But from these data for doctors and farmers it does not seem a very daring inference that during the course of these efforts to keep "in touch" one learns of many new developments. One gets "the word" concerning them. Contact with the outside world, then, seems to be characteristic of innovators in the two studies.

6. *The Communications Behavior of Early and Late Adopters—Contacts with Colleagues*

If the two studies are alike with respect to the differential contact of early and late adopters with the world *outside*, they appear irreconcilable with respect to contact *inside* the community. The hybrid corn study, as has already been indicated, finds that later adopters are more likely to indicate that neighbors had influenced them in their decisions to adopt. Furthermore, using the subjective testimony of the respondents concerning the extent of their "neighboring" as a measure of informal integration, Ryan and Gross find essentially no difference between early and late adopters in the extent of their *informal* community ties, although the early adopters are more likely to have been active in *formal* organizations of all kinds. Add to this the greater importance of outside connections for the innovator, and the resultant picture is one of a group of farmer-innovators who are oriented to connections outside their communities and who are proportionately more integrated in the formal organizational life than in the informal associational patterns.

At first glance, at least, this is not the case among doctors. The evidence of the drug study indicates that it was the *early* adopters who relied more heavily on their colleagues. In fact, the central finding of the study shows that integration in the medical community—measured sociometrically—is more closely related to time of adoption of gammanym than almost any other variable. And, unlike the relationship between outside connections and early adoption, in the present instance it can be shown that the fact of integration in the professional community "causes" early adoption via the intervening mechanism of interpersonal communication. Thus, it is evident from Figure 3 above that the integrated doctors were the earlier adopters and, from the shape of the curve, one can infer that this is because they channeled the message through networks of interpersonal communication. Moreover, doctors who adopted early were likely to adopt the new drug "simultaneously" with a sociometric colleague. That is, if doctors are paired according to their sociometric partnerships, and if the date of adoption of each set of partners is compared, it is found that innovating doctors were more likely than later adopters to write their first gammanym prescription close on the heels of a sociometric partner who had already written one.[27] Later adopters, on the other hand, do not act simultaneously with their sociometric partners any more than would be expected by chance. The "togetherness" of the early adopters, it is argued, necessarily implies interpersonal influence.

Thus the two studies are hardly parallel at this point. The hybrid corn study finds that the channels mentioned by the farmers themselves distinguish early and late adopters; the drug study does not. The hybrid corn study concludes that neighbors are more important for later adopters than for early ones; the drug study comes to the opposite conclusion. The drug study finds that doctor-innovators are more integrated inside the community (just as they are more connected outside), while the farm study finds informal integration unrelated to innovating behavior. On the other hand, both studies find more formal affiliations—such as participation in hospital meetings, in the one study, and participation in organizations, in the other—to be positively associated with early adoption.

One possible approach to the understanding of these conflicting sets of findings emphasizes the special importance of interpersonal communication for early-adopting doctors as compared with early-adopting farmers. Innovation in medicine is risky business. A new drug represents a highly ambiguous stimulus to which the doctor is asked to respond without knowing all that he would like to know about it. In this kind of situation, communication among colleagues serves to spread, and thus to reduce, the individual risk. Talking over what has been learned about the drug through "outside" channels; evaluating it; deciding to adopt "together" and pooling early experiences—these are some of the functions of interpersonal communication among integrated, innovating doctors. The data almost imply a kind of "group decision."[28] This is not to argue that colleagues were ineffective for later adopters among the doctors. Indeed, they are probably quite important for these groups—in much the way that Ryan and Gross found interpersonal communication important for later adopters among the farmers. The argument of the drug study, in fact, presumes that later adopters—particularly among the integrated doctors but to some extent, too, among the isolates—profited from the experiences of those who tried the drug earlier. The drug study, therefore, does not claim that interpersonal communication was unimportant for later adopters but only that it was unusually *important* for the innovators.

A second possible approach to an understanding of the two sets of findings focuses not on the different problems of innovating doctors, as compared with innovating farmers, but on the structure of *values* in the two communities. Ryan and Gross repeatedly emphasize that early adopters among the farmers were the vanguard of the secularization of rural life and:

> . . . that farmers most emancipated from the traditional closely built neighborhood life more easily emancipate themselves from a traditional technique. These innova-

27. This matter is rather fully discussed in Coleman, Katz, and Menzel, "The Diffusion of an Innovation . . .," *op. cit.*, 262-268.

28. The role of interpersonal influence in ambiguous situations has been studied experimentally, notably by Muzafer Sherif, "Group Influences Upon the Formation of Norms and Attitudes," in Maccoby, Newcomb, and Hartley (eds.) *Readings in Social Psychology*, Henry Holt, New York, 1958, pp. 219-233. The relevance of this formulation to other aspects of physicians' reactions to new drugs is discussed in Menzel and Katz, *op. cit.*, 344 and in Coleman, Katz, and Menzel, "Social Processes in Physicians' Adoptions . . .," *op. cit.*, 17-18.

tors, with their far-reaching contacts, represent an antithesis to characteristic features of solidary primary-group living.[29]

This is not true for the doctors. Integration in the larger medical world and allegiance to the scientific values of that world are strongly consonant with informal integration in the local community of colleagues. Indeed, these two kinds of affiliations, although perhaps not wholly without conflict, are empirically correlated and tend to reinforce each other. The local-colleague group, that is, seems to be identified with the scientific ethic of the profession as a whole. Therefore, it is the doctors who are most integrated, both formally and informally, both inside the local community and outside, who are in the vanguard of medical innovation. There is no question for the doctor, as there is for the farmer, of emancipation from local primary groups as a prerequisite to the acceptance of innovation.[30] In a sense, there is a parallel in this approach to the finding, in another study, that informal leaders in farm communities which are positively oriented toward innovation were ahead of the average community member in the number of recommended farm practices adopted, while the informal leaders of conservative-traditional communities were as far behind as the average member.[31] Where the norms of informal groups do not favor innovation, that is, innovators will not be found to be well-integrated members of such groups.

7. *Other Attributes and Attitudes which Distinguish Early and Late Adopters*

A number of other factors distinguish early and late adopters and, although they do not bear directly on the role of interpersonal relations in the diffusion process, they are important for the comparative task undertaken here. One of the most interesting of these is the attitude of "secularism" which is invoked repeatedly in the hybrid corn study as a motivating factor in the behavior of innovators. It represents an openness to rationality rather than tradition as a criterion for decision making. The parallel among the doctors is the doctor with "scientific orientation," an attitude which also implies an openness to change. Thus, construction of an index of "scientific orientation" (based on doctors' concern with research, exchange of scientific information and scientific reliability of information) reveals that the more scientifically oriented doctors adopted gammanym earlier—this, despite the greater caution which one also associates with scientific orientation. Similarly, the innovating doctor is more "profession oriented" than "patient oriented." As compared with later adopters, he measures himself in the eyes of his colleagues rather than in those of his patients.

What personal attributes characterize the innovators? The early adopter of gammanym, first of all, was a heavy user of drugs in the gammanym family prior to the appearance of gammanym; the farmer-innovator, by the same token, had considerably more corn acreage than later adopters. Both farmers and doctors who adopted early tended to be of higher socioeconomic status than their fellows: the farmer-innovators had more education and higher incomes (although they were not significantly more likely to be owners of their own farms as compared with later adopters), while doctor-innovators were more likely to have patients of higher incomes (and, thus, presumably, to have higher incomes themselves). Nevertheless, as has already been pointed out, there is no *a priori* reason why economic status should have been associated with early acceptance of these innovations although new drugs, of course, are notoriously expensive and doctors with poorer patients cannot so readily confront their patients with drugs of this kind.

Farmer-innovators were young; doctor-innovators, while very unlikely to come from the oldest age group, were slightly more likely to be in the middle-age bracket than in the very youngest group.

A Summary of Similarities and Differences

Altogether, considering that farmers and corn seed were compared with physicians and drugs, the similarities in the findings of the two studies give strong support to a number of empirical generalizations.

The comparability of the two studies is made possible in the first place because both studies were designed to take account of the major components of the process of diffusion viewed sociologically. Thus, 1) both studies focus on a given innovation. 2) Both follow the spread of the innovation through time, by devising methods for assigning a date to each adopter's first use of the innovation. 3) Both studies are concerned with the channels of communication which carried news of the innovation as well as with the channels which carried word that it was all right to go ahead and try. And, finally, 4) both studies specify social structures within whose boundaries the innovation spreads and with respect to which individual adopters are differently "located."

Given this kind of research design, certain kinds of analysis follow directly. Thus, both studies plot curves of diffusion to map the spread of the innovation, over time, within the social structure or various parts of it. The authors of the corn study inferred from the curve that interpersonal influence would appear to account for the observed pattern of spread. The drug study went one step further and, by comparing the curves for "integrated" and "isolated" doctors, could show that interpersonal influence was operative precisely where it would most likely be expected—among the "integrated" doctors. Thus, the drug study was able to confirm and further to specify the conditions for the operation of interpersonal influence in the process of diffusion.

Similarly, employing the data on channels of communication, both studies find that "information is not enough"—neither farmers nor doctors accepted the innovation upon first hearing. It was shown that there are media which typically inform a potential adopter about an innovation

29. Ryan and Gross, "Acceptance and Diffusion . . .," *op. cit.*, 707.

30. Of course, there may well be types of innovation in medicine toward which the otherwise progressive norms of professional medical groups would be inhospitable. The history of medicine provides many examples such as those reported by Bernhard J. Stern in "Social Factors in Medical Progress," Faculty of Political Science of Columbia University (eds.), *Studies in History, Economics and Public Law*, No. 287, Columbia University Press, New York, 1927. See also Menzel, Coleman, and Katz, "Innovation, Integration and Marginality," *op. cit.*, for a discussion of different types of innovation in medicine.

31. Marsh and Coleman, *op. cit.*

TABLE 6

A. The Design of the Two Studies

	Corn Study	*Drug Study*
A Specific Innovation	Hybrid corn	"Gammanym" (a "miracle" drug)
Time	Farmers classified according to own reports on year of first use	Doctors classified according to date of first prescription on file in pharmacies
Channels	Farmers' reports on the channels that influenced their decisions to adopt; farmers' reports on their general communications behavior	Doctors' reports on the channels that influenced their decisions to adopt; doctors' reports on their general communications behavior
Social Structure	All farmers in two Midwestern farming communities; individuals classified in terms of age, size of farm, etc., and in terms of their own reports concerning formal and informal integration	All doctors in four Midwestern communities; individuals classified in terms of age, type of practice, etc., and in terms of relative formal and informal integration measured sociometrically

B. The Findings of the Two Studies

	Corn Study	*Drug Study*
Rate of Diffusion	Curve implies three stages in diffusion process; and operation of interpersonal influence	(Curve implies two stages?); curve for "integrated" doctors implies interpersonal influence; curve for "isolated" doctors implies individualistic adoption
Extent of First Use	Early adopters are conservative in extent of first use; later adopters, building on experience of their predecessors, give more acreage to hybrid in season of first use	Early adopters are conservative in extent of first use; later adopters, building on experience of their predecessors, write a larger number of gammanym prescriptions in month of first use
Channels of Information and Influence	Lack of information does not explain differentials in time of adoption implying that information alone is not enough to make for adoption	Only 10% of doctors adopt on basis of information brought by initial information source implying that information alone is not enough to make for adoption
	Typical farmer heard first from a salesman, then talked it over with a neighbor. Neighbors were judged "most important" information source. Implication that commercial and formal sources "inform" while more informal sources "legitimate" decision to adopt	Typical doctor heard first from a salesman, then read about it in a journal and/or discussed it with a colleague. Salesmen were judged "most important" information source. Implication that commercial and formal sources "inform" while more informal sources "legitimate" decision to adopt
Communications Behavior of Early and Late Adopters	Early adopters read more farm bulletins	Early adopters read more medical journals
	Early adopters name salesmen as information sources more frequently than later adopters; latter name neighbors more frequently	No difference in recall of information sources by early and late adopters
	Early adopters make more trips to city, county fairs	Early adopters attend more out-of-town meetings
	Early adopters belong to more formal organizations; no difference in extent of informal neighboring	Early adopters more integrated than later adopters in informal friendship discussion and advice networks
Other Differences Between Early and Late Adopters	Early adopters more "secular" in attitudes; later adopters more "traditional"	Early adopters more "scientific" in attitudes; also more "profession-oriented" (rather than "patient-oriented")
	Early adopters have more corn acreage	Early adopters are heavier users of "miracle" drugs
	Early adopters have more income, more education	Early adopters have richer patients
	Early adopters are younger	Early adopters unlikely to come from oldest age group

and that there are media which "activate" or "legitimate" the decision to adopt. The former tend to be more commercial and more formal; the latter more professional and more informal. The salesman is a key source of information in both studies; interpersonal influence among colleagues is a key source of legitimation. By cross-tabulating time-of-adoption and channels of communication, both studies find the innovators more closely connected to sources of information and influence outside the community. Innovating doctors make more trips to out-of-town meetings than do later adopters; innovating farmers make more trips to the city.

By cross-tabulating time-of-adoption and relative integration, the drug study finds that early adopters have relatively more contacts inside, as well as outside, their home communities; they are more integrated in informal social relations with colleagues. The corn study, however, finds the early adopters more "independent" of informal community ties. Two approaches to the reconciliation of the conflicting findings were proposed.

Whether these generalizations apply equally to the diffusion of other innovations remains to be seen, of course. Surely, the special characteristics of these innovations, the particular way in which they were marketed, the peculiar characteristics of the social structures into which they gained entry, must all have affected their social itineraries. Clearly, what is needed is a comparative study of innovation which will trace different innovations, variously classified, as they proceed through given social structures. Altogether, the aim of this article has been to contribute to the design of such research and to help sharpen the issues which must be confronted.

The Japanese Schools for the Natives of Truk, Caroline Islands

J. L. Fischer*

Introduction

There is an abundance of official and semi-official reports of schools for dependent people in various parts of the world which emphasize the administrator's picture of the school system: the value and nature of the physical plant, aims, curriculum, enrollment and attendance, etc.[1] However all actual educational systems include two major parties: the teachers and the taught. The latter are all too often ignored.[2] Our purpose in this paper therefore will be to discuss the operation of the former Japanese school system for the natives of Truk, Caroline Islands, viewed as the product of an interaction between two major forces: the official government policy and the native culture.

Some description of the educational system of the former Japanese Pacific mandate, which included Truk, has appeared in English as a part of general studies of the mandate government.[3] While these descriptions do not concentrate specifically on the schools in Truk, the data came mainly from official sources, directly or indirectly, so the authors were forced to be concerned largely with the official educational policy and programs. These were similar throughout most of the mandate and Truk is not atypical.

Another quite different source of published information about the Japanese schools on Truk is found in the life histories of some natives of Romonum I., Truk, published by Gladwin.[4] Here the opposite emphasis—on the native side—is present. Since Gladwin was interested in the psychology of the natives, he does not discuss the schools as such but simply records certain incidents in the scholastic history of his informants which they happened to remember in the course of giving a general life history.[5]

In this paper we shall try to put the Japanese and native sides together, using information from the authors cited above as well as other information gathered personally in the Caroline Islands, during the years 1949-53, while I held the position of District Anthropologist and later Internal Affairs Officer, for the present U.S. government of what is now the Trust Territory of Micronesia.[6] During this period, data about the schools were acquired from native informants, from limited Japanese official reports and regulations, and from inspection of the old school sites and buildings themselves.

Needless to say, it would have been highly desirable to have questioned some of the former Japanese teachers and officials. This was not possible, since our Navy, for security reasons, repatriated all persons of Japanese nationality at the end of the war. However, there may be an advantage to the weighting of the data on the native side for once, since the balance is the other way around in most reports of schools for dependent peoples.

Historical Background

To most Americans the name of Truk,[7] if it means anything at all, suggests an impregnable Japanese naval base which was left to "wither on the vine" in World War II. However, before the Japanese military development, Truk

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1. There would be little point in citing examples of such studies, as they are mostly of regional significance. Included would be many publications of colonial and national departments of education, as well as UNESCO, and secondary publications based mainly on data from these and other official sources.

2. There are some refreshing exceptions to this statement. For a particularly distinguished collection of these see *American Journal of Sociology,* Special Issue on Education, XLVIII, no. 6 (1943).

3. Paul H. Clyde, *Japan's Pacific Mandate,* Macmillan, New York, 1935 and T. Yanaihara, *Pacific Islands Under Japanese Mandate,* Institute of Pacific Relations, American Council, Oxford, England, 1940.

4. Thomas Gladwin and Seymour B. Sarason, *Truk: Man in Paradise,* Viking Fund Publications in Anthropology XX, New York, 1953.

5. Thomas Gladwin, Unpublished field notes, 1947. Gladwin's life histories as published are somewhat abridged to eliminate material which is redundant or superfluous for the study of the personality of his informants. Some of the omitted material deals with native experiences in the Japanese schools. Gladwin has kindly provided me with access to his full life histories for the purposes of this study.

6. I was actually on Truk for about fifteen months in 1949-50, after which I transferred to Ponape, about 380 miles to the east. On Ponape I was able, however, to learn more in general about the Japanese schools for natives, and also continued to work on Trukese culture with informants drawn from the sizable immigrant colony there.

7. For more detailed information and bibliography on the history and culture of Truk, consult J. L. and A. M. Fischer, *The Eastern Carolines,* Human Relations Area Files, New Haven, Conn., 1957.

had a native population of about 10,000 people. These people or their descendants are still there today now under a United Nations trusteeship administered by the United States. To the islanders, the fortification of Truk toward the end of the Japanese rule was a violent but transitory stage of history which has now passed, leaving little to show. The era of Japanese peacetime administration between the two World Wars, however, is still recalled by those who experienced it as a time of relative prosperity and progress. We shall be concerned below mainly with the operation of the schools during this settled peacetime era, roughly 1924 to 1939.

Geographically and culturally Truk and the rest of the Carolines are classified as part of Micronesia, "the small islands." Truk is not the name of any one island but applies actually to a cluster of about a dozen high islands of habitable size. No island is more than a few miles long and the total land area amounts to about 37 square miles, but the islands are located in the middle of a large, reef-encircled lagoon about 40 miles in diameter.

European traders and whalers in the Carolines in the nineteenth century considered the natives of Truk to be especially hostile and treacherous, so they largely avoided it in favor of allegedly more hospitable places, such as Yap, Ponape, and Kusaie. Consequently Truk was the last high island group in Micronesia to be brought under the control of a large modern nation. Until the beginning of this century, the people of Truk were divided into a number of independent, frequently warring communities, of which there were several to an island two or three miles in length. This disorderly state of affairs, which was considerably aggravated by the introduction of foreign firearms and liquor, was suddenly and efficiently terminated in 1904 when the German government, which had bought the Carolines from Spain shortly before, sent in a warship which collected several hundred rifles and carried off a few disruptive chiefs to exile on another island. Beyond establishing law and order and guaranteeing the personal safety of foreign missionaries and traders, the German government did little during its brief stay on Truk.

In 1914 when World War I began, only ten years after effective German occupation of Truk, the Japanese promptly declared war on Germany and easily occupied the lightly garrisoned German island possessions in Micronesia: the Carolines, Marshalls, and northern Marianas. The islands were governed initially by a military administration, but at the Versailles peace conference arrangements were made to put them under a League of Nations mandate. Therefore the Japanese, along with other mandatory powers, were under international pressure to establish a civilian administration with certain obligations to protect the interests of the native inhabitants. The transfer to civilian authority was completed in 1922, and economic, medical, and educational programs for the natives gained momentum after this date.

The Japanese, like the Germans, divided the Carolines into administrative districts governed from centers located on some of the more populous high islands. Under the Japanese, Truk—more specifically Dublon or Tolowas Island—was established as an administrative center. (Previously, under the Spanish and Germans Truk had been governed, rather nominally, from Ponape, 380 miles to the east).

Educational System of the Japanese Mandate

The Japanese administration followed a policy of starting their educational and other socio-economic programs for the natives at the district centers and spreading outwards. The government school system for natives was initiated by establishing a three-year elementary school near the district administrative center on Dublon Island. This school was staffed by Japanese male teachers with Trukese assistants. The latter at first served as interpreters and helped with the discipline. Students were selected on a quota basis from the various islands of the lagoon. Apparently only boys were selected at first, although girls were soon added.

Eventually other three-year elementary schools were established on the other large islands of the lagoon and on one of the Mortlock Islands, a group of atolls to the south of Truk, while a higher elementary school of two additional grades was established at the district center on Dublon Island for selected graduates of the lower schools. Lower school attendance was then made compulsory within Truk Lagoon.

A further step on the educational ladder was eventually provided with the establishment of a trade school for carpenters at Koror, Palau, a thousand miles to the west. Promising graduates of the higher elementary schools were selected from all over the mandated territory to attend this school. Later a small agricultural school was established on Dublon Island, Truk, and, after the Japanese started to alienate "undeveloped" native land for colonization, a surveyor's school was established in Palau.

The purpose of the schools for natives, judging from both reported policies and the Japanese school regulations[8] was to civilize the natives and make them into loyal and economically useful citizens of the Japanese empire. While there was theoretically no limit to the higher education which the native child with sufficient ability and financial support might obtain, in actual fact only a minority of Trukese children attended the fourth and fifth grades, and only a minority of those completing fifth grade obtained further education at the vocational schools. Apparently no Trukese native obtained any academic education beyond fifth grade, except incidentally along with vocational training. The system was geared in effect to produce a supply of general laborers and domestic servants who understood the Japanese language, plus a small elite of skilled laborers and petty officials.

The chief subject in the prescribed elementary school curriculum was the Japanese language, spoken and written. Officially language work was supposed to occupy half of the teaching time; arithmetic about a quarter; and miscellaneous subjects, such as gymnastic exercises, singing, handicraft, ethics, and geography, the remainder. According to reports of students the actual emphasis on the Japanese language was if anything even greater than this. While the official curriculum prescribed the teaching of the more common Chinese ideographs as well as the Japanese *Kana* syllabary,

8. South Seas Government Office (Japanese Mandate Administration), *Nan'yō-Chō Hōrei Ruishū* (Compendium of the Regulations of the South Seas Government Office), Government Printing Office (in Japanese), Tokyo, 1939.

few, if any, native students could be said to be literate in Japanese to the extent of being able to read a newspaper by the end of fifth grade. Certainly none could read the regulations promulgated by the South Seas Government Office; and these regulations were not translated, except sometimes orally and in summary by rather confused native interpreters.

The pronunciation of spoken Japanese by Trukese elementary school graduates left much to be desired. Apparently no native students learned to pronounce the letter *h,* nor to distinguish between the voiced and unvoiced consonants, so that, for instance, the Japanese words *aji*—"taste" and *hachi* —"bee" would be pronounced identically.

The Japanese schools did not try to teach reading or writing in the native language, although some Trukese learned these skills from the Western Protestant and Catholic missionaries. Starting even before German rule, the missionaries had translated parts of the Bible and prepared hymns and other religious materials in Trukese, and continued to teach reading and writing in the native tongue to such children as would come to them.

It is only proper to point out that the official emphasis on teaching the Japanese language was no doubt conceived to be for the benefit of the natives as well as for their rulers and potential employers. For any nonreligious subject there were no suitable instructional materials in the native language. Trukese is only one of a number of mutually unintelligible languages in the mandate, each with a small number of speakers, so translation and publication of textbooks would have been difficult even if contemplated. Moreover, the natives themselves wanted to learn Japanese, and in view of the small number of grades open to the average student even the considerable time devoted to studying Japanese could be argued to be less than optimum.

In the higher grades the official curriculum emphasized agriculture somewhat more—four hours a week in fourth and fifth grades.[9] According to native students this meant mostly working in a vegetable garden for the teachers and was not regarded by the students as education. The average Trukese, in fact, does not regard green vegetables as fit for human consumption.

Instruction in mathematics was limited to simple addition, subtraction, multiplication, and division. Graduates of fifth grade were officially supposed to know how to work with fractions but I received the strong impression that few of them did. Some Protestant mission-school graduates, on the other hand, could work out the most elaborate problems in fractions on paper but had no idea of what they meant; they could not use fractions, for instance, to figure out how much the trader owed them for their bag of dried coconut meat.

The physical plant of the government schools consisted of the school building itself (classrooms and storerooms), and quarters nearby for the teacher or teachers. The school buildings were designed and built by the Japanese government, although native contributions of building sites and labor were evidently sometimes encouraged. The school buildings were of substantial construction; more substantial, one might argue, than was needed in the mild climate of Truk.

No provision was made to feed or house the students at the elementary schools (except for some meals provided for a time at the Dublon school). Students from other islands in the lagoon were expected to find distant clan relatives or friends of the family with whom to board and lodge. Students who had trouble finding a place to stay would sometimes end up with the local chief, who was no doubt under considerable informal pressure from the government to assist in this respect. Students could obtain some food to take back with them on weekend visits home. However, since breadfruit, taro, and fish, the native staples, spoil rapidly, these supplies would not last the whole week and off-island students would be dependent on their local hosts for the balance of the school week.

The school site was generally large enough to have an athletic ground of some sort. Some of these grounds were large enough for baseball fields. Baseball became quite popular in Truk in Japanese times and English baseball terms are still pronounced in a Trukese modification of a Japanese accent by the men who attended Japanese schools.

Japanese methods of instruction of native children relied heavily on drill and rote memory. The first item in an official curriculum description of arithmetic for first grade, for instance, is "recitation and writing of the numbers up to 100"; for second grade the corresponding item is the same for numbers up to 1000. For the subjects most emphasized, i.e., language and arithmetic, constant drill is probably especially efficient in the early stages of mass classroom instruction.

Many of the children feared the instructors, who tended to be rather harsh disciplinarians. In life histories collected by Gladwin[10] and myself, references are made to children being frequently beaten, slapped, or "hit on the head with a small stick" for being lazy in their school work or giving incorrect answers. More severe beatings and other punishments are reported for more serious offenses such as unauthorized absences or fighting with other children. One of Gladwin's informants reports[11] twice being made to stand out in the sun for several hours. This same informant reports being slapped until his face was "covered with blood" by one of the Trukese assistant teachers for making an unauthorized trip to his home island. On this particular occasion the Japanese teacher intervened and stopped the beating, but only to substitute standing in the sun.

Very likely the corporal punishment experienced by the native students was more severe than would be administered to pupils in the Japanese homeland. We no doubt think of these punishments as something that would not be administered by American teachers but parallel examples could be cited from accounts of American Indians[12] describing their white teachers. The severity of the punishment in both cases can be attributed to the relatively small danger of effective protest by the children or their parents for any injury short of serious maiming, and also especially to the numerous frustrations in the teacher's job. In the case of Truk, frustrations

9. South Seas Government Office, *op. cit.*

10. Thomas Gladwin, *op. cit.*

11. *Ibid.* and Thomas Gladwin and Seymour B. Sarason, *op. cit.*

12. C. Kluckhohn and B. Leighton, *The Navaho,* Harvard University Press, Cambridge, Mass., 1946.

occurred partly because of the inherent difficulties of teaching small children in a language not their own about a culture not their own, but also because of the lack of motivation of most of the Trukese students.

Effects of Trukese Culture on Pupil Behavior

The native social structure and school experiences both contributed to low pupil interest in school work. For one thing, Truk is a rather cooperative culture where much emphasis is laid on modesty, submissiveness, and helping one's kinsmen. A child who shows off his superior knowledge in school exposes himself to the ridicule of his comrades for his "haughtiness" (Trukese *namanam tekia,* more literally "thinking high").

Perhaps even more important, nature is fairly kind in Truk and children have traditionally been allowed to spend their time playing, with few demands on them for concentrated effort in subsistence labor or otherwise. Serious applied effort, physical or intellectual, is hardly expected of people until middle age.

Those children who were from other islands found themselves removed from their families and were generally quite homesick. Several of Gladwin's informants tell of inventing stories about sick or dying relatives in order to get excused from school for extra visits home.

The dislike of being away from home was often aggravated by fears about the community in which the school was located. Only a few years before the founding of the school system, it will be recalled, the various communities of Truk Lagoon were independent and often at war with each other. The peace imposed by the Germans and maintained by the Japanese was appreciated by most people, but they had good reason to wonder just how really friendly the intentions of their neighbors across the channel or around the point were. The hostilities of the adults were reflected in small-scale fights between gangs of boys from different communities. When the teacher was not looking, fights between boys of different communities often broke out at school. This is mentioned by all the Trukese men who give accounts of any length. Younger boys from a community off the island on which the school was located were in an especially difficult position, and were subject to regular bullying.

The problems of off-island pupils with respect to food and housing have already been alluded to. While the Trukese are fond of visiting and are quite casual about where they sleep, they typically exhibit a strong concern about getting enough food, more so even than would seem to be justified by the environment. In any case, it is not hard to understand the resentment of the chiefs and others who were asked to feed and lodge strange students from other communities without compensation from the government or the students' families. It does not seem unreasonable that the "hosts" should have hoped to get a certain amount of labor after school hours from these free boarders. At the same time the reluctance of the hosts to feed the students liberally provoked considerable anxiety at times in the latter, and the demands of the hosts on the students to help pay for their food by working after school had a similar effect on children who had had little to do at home except to amuse themselves. Parents were often sympathetic with these problems of their children at school and sometimes assisted them in fabricating excuses to present to their teachers.

Another distraction to the older students was the tolerance of early sexual activity characteristic of Trukese culture. Truk is among those Oceanic cultures which have the charming notion that the beginning of menstruation in girls is an effect, sooner or later, of loss of virginity. Since the prescribed minimum age for entering school was eight years and an age of nine or ten was common, many of the students reached puberty in their fourth or fifth year of school and became deeply involved in romantic affairs with their schoolmates of opposite sex or with other age mates in the community.

An excerpt from the life history of one of my male informants illustrates this situation:

> Eventually I got to fourth grade and I started to become stupid. I no longer knew a thing, so to speak. For that was when I started to be concerned with women and started to get women. . . . And I also started to smoke cigarettes. . . . And I was all filled with thoughts of women but my thoughts of school were rather small. I used to return to my own island and I met many women and they liked me very much. I thought I would give up school . . . just because of my interest in women. I would stay away for a week or two at a time.

The informant was nevertheless not expelled from school and was eventually straightened out by his mother's brother, after his grades had dropped markedly.

No doubt increased sexual interest at puberty can interfere with scholastic achievement in large urbanized societies as well. The point to be noted here is that Trukese culture maximized this interference by regarding early sexual activity as normal and healthy, whereas modern European cultures would tend to limit heterosexual contact and stigmatize sexual intercourse immediately upon reaching puberty as precocious and unhealthy.

It would be wrong to give the impression that every Trukese was unalterably opposed to the Japanese school system. Many adults recognized the usefulness of a speaking knowledge of the Japanese language in dealing with government officials, police, and traders, and in getting odd jobs to get cash which would buy cigarettes, rice, and other luxuries for oneself and one's family. The chiefs especially recognized the value of getting promising young relatives through school and into minor local government posts to serve as buffers between the Japanese and the native community.

Some of the more capable and ambitious students eventually came to recognize these advantages of a Japanese education for themselves. In addition, some of the more adventurous boys in the higher elementary school cherished the hope of getting to visit distant places by their school work. They hoped good studying might lead to their acceptance in the Carpentry School at Palau, or to a job as labor foreman in a mine or plantation on some far island.

Although most academic subjects held little intrinsic interest for the Trukese there was some interest in vocational subjects. Most notably, carpentry was traditionally a highly respected craft in Truk, and Japanese style carpentry was respected by both students and adults, both for its technical superiority and its association with the ruling group. Most

parents, however, were reluctant to have their children go out of Truk Lagoon to attend school and it is my impression that most Trukese students who actually got to the carpentry school in Palau, a thousand miles away, were orphans with no intimate close relatives to restrain them.

Long Range Effects of the Schools

After graduation the fate of the students varied. The most common fate for graduates of the first three grades, and especially the girls, was simply to return home and forget much of what they had learned, if indeed they had ever learned it. However a sizable minority got menial jobs with the government or private firms or individuals, or went on to two more grades of higher elementary school. In any of these events the start in learning the Japanese language was of use to them. Eventually, during the war, all able-bodied Trukese men were conscripted for military labor and any knowledge of the Japanese language they had helped them at this time, although the peacetime curriculum does not appear to have been directed specifically to the requirements of military labor.

Those students who had gone on successfully through fifth grade, especially the boys, were in greater demand as personal servants, government interpreters, assistant teachers, policemen, native village secretaries, labor foremen, and the like. These graduates generally had a working knowledge of spoken Japanese and enough knowledge of the written language to keep simple records or prepare simple reports, mostly in *kana*. They were by no means all reliable workers—the schools seem to have developed ingenuity in making excuses for absences and the Trukese are great visitors—and periods of employment often alternated with periods of living on their own land, but they did constitute a sort of trained labor supply which was available to be drawn on.

A few of the higher elementary graduates went on to vocational training, principally the Carpentry School at Palau. Graduates of this school were capable of constructing sizable Japanese-style wooden buildings without supervision and some of them are still doing this.

In assessing the results of the Japanese school system for natives the intention here is neither to criticize nor praise the Japanese mandate administration but simply to call attention to some of the major effects of the school from the viewpoint of the principal parties—the Japanese government and their Trukese wards—and to suggest some of the chief factors producing these effects.

The evaluation of these effects is, of course, different depending on the viewpoint involved. Three viewpoints seem especially important: that of the Japanese administration, that of the native community, and that of the students as individuals. The Japanese administration had two principal goals, which they regarded as closely related: the politico-economic integration of the natives into the Japanese empire and the advancement of the natives by civilizing them. The native community had the goals of securing more favorable treatment from the Japanese officials and commercial firms, and of acquiring greater articulateness, which might be used either to gain assistance for desired changes or to resist disliked innovations. Further, individual graduates might have special personal goals of their own which their education helped them to obtain.

The Japanese government was achieving fair success in its goal of making the students and the native community a functioning part of the Empire. The large number of students who did not go beyond third grade should not be taken as an indication of the failure of the system from the Japanese point of view. The schools were intended to proceed by progressively selective stages and produce a small native elite, which would then help modify the native society with government support. In this aim the government was reasonably successful, given the time which they had for operation, and the small amount of acculturation at the beginning of the Japanese period. This integration into the culture of the Empire took place not only through native employment under the Japanese, but through certain changes in the ways in which the Trukese lived among themselves. Election of local officials was introduced, for instance, and, on the material side, it was largely thanks to the Carpentry School graduates that, at the end of World War II, the Trukese were able to utilize abundant scrap military lumber to eliminate the old style grass huts—esthetically pleasing to the anthropologist but damp and drafty—and to replace them by more livable modified Japanese-style houses. In changes such as this the goals of teachers and students tended to coincide.

But the native goals, both community and individual, were at times opposed to the goals of the mandate government. On such occasions the education served the natives equally well to manipulate individual Japanese into acting against general government policy. For instance, one accomplished graduate told how he used his knowledge of Chinese characters to forge a liquor purchase permit to which he was not properly entitled, and how he flattered a policeman and bribed him with a chicken to avoid arrest for drunkenness. He probably could have done neither of these successfully without having gone to school.

Some individual natives also used their education to obtain favors for themselves which were against the general interests of the native community. In land disputes or political appointments interpreters sometimes managed to bring about decisions favorable to themselves or their families of which the community at large disapproved. The Japanese government disapproved of such behavior, of course, as well as the native community.

Community as well as individual interests were pursued with the aid of education received by the public school graduates. The same informant who forged the liquor permit and bribed the policeman told me of participation in a strike of workers who were helping to build an airfield. Evidently the idea of an organized strike was received via the Japanese language from certain private Japanese citizens, and was thus to an important degree dependent on the education of some of the workers. Such a strike was certainly not in the interests of the government nor even, perhaps, in the interests of the individual Japanese who told the Trukese about the existence of strikes. The strike was, in fact quickly and forcibly suppressed by the officials in charge with the aid of the police, ostensibly with no concession to the strikers, although it may have had some hidden effect in warning the overseers not to push the Trukese workers too far. I do not

wish to imply that the idea of a strike could not have arisen spontaneously without diffusion from Japanese through educated natives, but I would recall that, as already mentioned, the Trukese even today have strong local loyalties to their own particular village and lineage, and do not easily cooperate with Trukese from other parts of the group. I believe, therefore, that the conception and execution of the strike of airfield laborers was materially hastened by the education some of the laborers had received, although certainly there would have been no strike at all without a strong conflict of interest between employers and employed.

The interpreters, jailers, and assistant policemen employed by the Japanese government consisted almost entirely of public school graduates chosen for their ability to speak some Japanese. While there are many accounts of how these individuals used their special positions for personal ends, there are also reports that many of them were secretly responsive to the recognized Trukese leaders in the performance of their duties as well as to their Japanese employers. It is said that they often served as spies on the government for the Trukese community, and communicated information between the community and prisoners whom the community wished to support, thus enabling witnesses and accused to fabricate consistent alibis. Education, as colonial powers have often discovered, can be a two-edged sword.

Conclusion

In the above discussion the role of the Trukese culture and values in the actual operation of the Japanese schools for natives in Truk has been especially stressed. This is partly unavoidable because of the fact that the data were mostly collected in Truk after the end of the war when, as mentioned above, the Japanese personnel involved had been repatriated and dispersed, and most official records lost. However, there is also a theoretical justification for the emphasis on the native culture. Too often discussions of directed culture change in underdeveloped areas proceed on the unstated naive assumption that the only important dynamic factors are the goals and plans of the initiating group; that the behavioral differences between the initiating group and the group to be developed are principally a matter of information and perhaps also technological equipment, which, once supplied by formal education or other means, will automatically result in a harmonious and productive relationship between the two groups. The very term "underdeveloped" implies that something desirable is not there and the principle question is how soon "it" gets there.

Perhaps it is only necessary to state this assumption to see its absurdity, but the application of this insight can only be achieved by constantly bearing it in mind and considering it repeatedly in a variety of concrete situations. All human groups and individuals have, of course, their own particular interests and values. Even if we grant, as I would, that these have an ultimate biological foundation and are basically similar, their persistent concrete manifestation and balance often differ significantly from group to group. And even where two groups have very similar interests, the interests may conflict if attached to different particular objects. Thus, for example, practically all Trukese share a similar strong local and lineage loyalty, but to a variety of particular places and lineages which are in competitive conflicting relationships. And, if the Japanese had succeeded in weakening these narrow loyalties and in substituting a wider national loyalty, this might still have turned out to be a pan-Trukese or pan-Micronesian loyalty, rather than a pan-Empire loyalty.

It is hoped that apart from any local historical contribution this paper may make it will illustrate the importance, in studying trans-cultural education and other directed culture change, of considering not only the goals of the initiating culture and institution but of considering also the goals and values of the recipient group in interaction with the goals of the initiators, sometimes impeding them, sometimes hurrying them along in a continuous process. From a practical point of view this means that to develop an underdeveloped area for the greatest benefit of all concerned, including developers and those being developed, it is not enough simply to supply missing information and technological equipment, under an assumption of community of basic interest between the parties involved. Nor is the problem of difference of interests and values to be solved simply by labelling certain new interests and values—those of the politically or economically more powerful group—as more "civilized" or "progressive." Rather, the particular interests and values of the group to be developed and the relation of these to those of the assisting group must both be examined, and the new knowledge (and equipment) must be introduced and applied in such a way as best to serve multiple and often partly conflicting interests, interests which may conflict both *within* the local society and *between* the local society and the assisting group.

It would, of course, be unreasonable and impractical to demand that all possible conflicts of interest and values involving the concerned parties be determined in advance and a resolution of them be formulated before establishing schools or providing other assistance to a dependent or depressed group. Conflicts of interest cannot always be foreseen in detail, and in any case require careful, repeated, and detailed attention. But without such attention we can certainly predict that the results of the educational process will be something other than those intended by the initiators, and may "backfire" on the initiators, as the example of Truk shows on a small and at times amusing scale. And if strong conflicts of interest are simply ignored and a rational compromise is not arranged and maintained, the effects of educational and technical assistance may even operate to the net major detriment of the assisting group.

Consensus and Coalition in the Release of Mental Patients

A Research Note

Howard E. Freeman and Ozzie G. Simmons*

The return of the mental patient to the community is necessarily preceded by a decision-making process involving hospital, patient, and frequently the patient's family. One of the critical decisions facing the parties involved is where the patient should live after leaving the hospital. The decision made with respect to the patient's residential setting undoubtedly affects other aspects of the release process—including whether or not the patient is actually released—as well as the course of his post-hospital experience.[1]

The patterns of consensus and coalition which exist among patient, family, and hospital with respect to where the patient should live after hospitalization were first investigated in an exploratory study of 85 persons with diagnoses of psychoses consecutively released from a large state hospital.[2] Psychiatrists were employed as informants. On the basis of the relationships documented, it was possible to make the following generalizations:

1. There is frequently disagreement between family, patient, and hospital about where the patient should live upon returning to the community.
2. The patient almost always gets his way about where to live, not only when he is in a coalition with either family or hospital, but even when he is in the minority.
3. The family and hospital get their way only when they are in a coalition with the patient, otherwise they do not.

In this paper, we report on a second investigation of consensus and coalition in deciding where the patient should live upon returning to the community. The major objective of this research is to reexamine the generalizations developed in the earlier study. There are a number of differences between the two studies. In the earlier investigation, the patients included in the study group returned either to familial or non-familial settings. The present study includes only patients who went to live with family members upon release, and a more specific issue is examined, namely, coalition and consensus with regard to whether or not the patient should return to his family setting. Moreover, the present study employed family members rather than psychiatrists as informants, and the patients were drawn from eleven hospitals in addition to the hospital used in the earlier study. Differences in release practices of these hospitals may influence the decision-making process under investigation. Thus, strictly speaking, this study is *not* a replication of the earlier one, but constitutes an attempt to accumulate a systematic body of knowledge about an important issue in the course of a mental patient's hospital experience.

Method

The data employed in this paper were collected as part of a large-scale investigation of the conditions under which patients succeed in remaining in the community after hospitalization. Two interviews were conducted with a relative residing in the household of the former patient. The first interview was obtained as soon as possible after the patient returned to the community. In the event that he remained in the community for a year, a second interview took place at that time. If the patient returned to the hospital during the year, the second interview was obtained shortly after rehospitalization. The data employed here are from the first interviews, and although the information is retrospective,

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1. Howard E. Freeman and Ozzie G. Simmons, "Mental Patients in the Community: Family Settings and Performance Levels," *American Sociological Review*, XXIII (April, 1958), 147-154.

2. Ozzie G. Simmons, James A. Davis, and Katherine Spencer, "Interpersonal Strains in Release from a Mental Hospital." *Social Problems*, IV (July, 1956), 21-28.

it was obtained reasonably soon after release. Patients were in the community an average of 41 days at the time of the interview (standard deviation = 16.5 days).

The relatives interviewed were predominantly the mothers and spouses of patients who "left bed" during the first six months of 1959. "Left bed" was defined as remaining in the community for more than 30 days with the expectation on the part of the hospital that in-patient treatment was completed. Many of the patients were technically still "on the books" of the hospitals, either on "trial visit" or "extended leave" status at the time of the first interview.

Every patient with the following characteristics was included in the drawing group: between 20 and 60 years of age, white, native born, living in Boston or adjacent areas, hospitalized for purposes other than observation, not physically handicapped to the extent of being unemployable, not hospitalized primarily for acute alcoholism, and not addicted to narcotics. By diagnosis, all were psychotics with non-organic, functional disorders, the majority schizophrenic. Each patient selected was last hospitalized at one of twelve hospitals in eastern Massachusetts, of which nine are state and three are Veterans Administration.

The hospital records of all patients meeting these criteria were reviewed. After eliminating patients released to foster homes, half-way houses, and day hospitals, interviews were attempted in all but 12 of the 714 cases in which the patient returned to a family setting. These 12 cases met all the criteria but returned to the hospital before the interview could be accomplished. Of the 702 interviews attempted, 649 (92 percent) were completed: in 49 of the uncompleted cases, the informants either had severe language problems or were too emotionally disturbed to be interviewed, and in four cases the informants could not be located. Hospital record data were available for all patients, and chi-square goodness-of-fit comparisons of the completed cases and of the total study group on 48 social and clinical variables revealed that only chance differences exist between completed and uncompleted cases. Likewise, there are only chance differences between completed and uncompleted interviews with respect to the interviewer, the month the patient left bed, and the kin relationship of the informant to the patient.

The completed cases include 280 males and 369 females. The majority of the patients were hospitalized less than six months, although two-thirds were previously hospitalized for over 15 days. Approximately half the patients are married. Interviews were conducted by psychiatric social workers in the home, unless the informant desired otherwise. A standardized interview schedule was employed, and interviews averaged somewhat less than two hours. In addition to the data reported in this paper, the schedule contained items to elicit social and cultural data, attitudes toward mental hospitals, treatment and illness, pre- and post-hospital work and social behavior, "personality" characteristics, and relatives' expectations of post-hospital performance.

Results

The data were obtained by means of four structured questions designed to elicit the position of the hospital, the patient, the family member who served as the informant, and other family members. Responses to the questions on the views of the informant and other family members were pooled in order to obtain the position of the family on the issue. In pretesting these items, it was felt that there was reluctance on the part of some informants to report disagreements in which family members figured, and an attempt was made to overcome this resistance in two ways. One was to introduce these questions with the following comment:

> Studies show that very frequently patients and families don't agree on where the patient should live after he leaves the hospital . . .

A second approach was to bias deliberately the response categories in order to filter out instances of disagreement. For example, the response categories read to the informant after the question,

> Did you want him to live here? [were] definitely wanted him to, had mixed feelings, and did not want him to.

It is believed that these approaches reduced the reluctance on the part of informants to report disagreements.

The patterns of agreement and disagreement between the three parties are presented in Table 1. In approximately 15 to 20 percent of the cases, there is disagreement between two of the parties with respect to patients' living with their families after hospitalization. The proportion of cases in which there is agreement between two of the parties is considerably higher than in the earlier investigation. In three-quarters of the cases, the pattern is one of consensus between the three parties. This is in contrast to the previous study in which there was agreement between the three parties in less than one-half the cases.

TABLE 1

Agreement and Disagreement Among Patient, Family and Hospital

Pair	*% Agreement*	*% Disagreement*	*100% Equals*
Family-Hospital	80.4	19.6	606*
Patient-Hospital	82.3	17.7	600
Patient-Family	86.9	13.1	636

* Difference between number and 649 equals cases lacking sufficient information on one or more questions.

Limiting the study group to patients living with their families undoubtedly accounts, in part, for the higher proportion of pairings in which there is agreement between the parties. One would expect that patients who live in other than familial settings often do so because of disagreement as to the appropriateness of returning to the family setting after leaving the hospital. It is likely, however, that the greater frequency of agreement between pairings is also related to the use of different informants; psychiatrists probably perceive the release process as subject to greater strain than do the relatives of patients.

Interestingly enough, although any two of the parties agree with greater frequency in this investigation than in

TABLE 2

Patterns of Consensus and Coalition

Pattern	*Percent*
Patient, Family and Hospital Agree	76.2
Patient and Family vs. Hospital	13.0
Patient and Hospital vs. Family	6.3
Family and Hospital vs. Patient	4.5

100% equals 592*

*Insufficient information on one or more questions for 57 cases.

the earlier one, the rank order is the same with respect to the proportion of agreement in each of the three pairings. In both studies, the patient and family are most likely and the family and hospital least likely to be in agreement (see Table 1). Likewise, the results of the two studies are consistent with respect to the minority party in the instances of coalitions. The hospital is most likely to oppose the other two parties, while the family is more likely to be a party in a coalition than are either patient or hospital (see Table 2).

Examination of the coalition patterns indicates that in approximately five percent of the cases the minority got their way; that is, the patient resides in the family setting although only one of the three parties favored this choice. The probability of the coalition winning the decision depends upon whether the patient, family, or hospital is the minority party. The outcomes for the different coalition patterns are reported in Table 3. As in the previous study, the patient is more likely than not to determine the outcome ***whether he is in a coalition or is the minority party***. A coalition of patient and family is virtually sure of obtaining the decision; the hospital, when it is in the minority position, only rarely determines the outcome. If winning the decision about where the patient should live is any index of relative power, it is apparent that the patient ranks first, the family second, and the hospital third.

TABLE 3

Outcome for Coalition Patterns

Coalition	*Cases in which majority got their way*	*Cases in which minority got their way*	*100% equals*
Patient and Family vs. Hospital	92.2	7.8	77
Patient and Hospital vs. Family	64.9	35.1	37
Family and Hospital vs. Patient	38.5	61.5	26

Conclusions

The results of this study are consistent with the findings of an earlier investigation of patterns of release, with the exception that the proportion of cases in which there is disagreement regarding where the patient should live after hospitalization is much lower this time. Both investigations yielded similar results regarding the patterns of coalition. The hospital is most likely to be the minority party, and the patient the least likely to be in the minority position. Regardless of whether the patient is paired or is the minority in the coalition, however, he usually gets his way. The family and hospital get their way only when they are in a coalition with the patient, otherwise the best prediction is that they will not. A coalition of patient and family against the hospital is virtually unbeatable.

The ability of the patient to gain the decision even when he is the minority party is in marked contrast to the *formal* power of the three parties to determine the course of events. The hospital appears, in fact, to be the weakest of the three parties, although it is usually assumed that medical personnel occupy a superordinate role vis-à-vis the patient and his family. In the case of mental patients, it would seem that this should be even more typically the case because of the legal control over patients that is vested in the hospital.

Since hospital personnel do not have access to information on an actuarial basis regarding decision making during the release process, they are not likely to be aware of the discrepancy between the actualities of the release situation and the outcomes that might be anticipated on the basis of the differential formal power of the parties. At the point of release, the patient appears far from helpless. Indeed, as our findings indicate, his preference carries the most weight in the decision making that occurs with regard to the choice of post-hospital residential setting. In planning the release of a patient, hospital personnel must take into account their limited influence in determining the course of events unless their plans have the concurrence of the patient. This *desideratum,* rather than the psychiatrist's own evaluation of what would be best for the patient, seems to be the realistic point of departure for release planning. Of course, hospital personnel do have the option of exerting their formal power in determining the disposition of the patient, even if this means ignoring the patient when planning for his release. Implementation of this policy, however, would necessarily result in a sacrifice of other treatment goals to which psychiatric practice is currently oriented.

Agents, Timing, and Events Leading to Mental Hospitalization

Erwin L. Linn*

Mental patients manifest a range of very unusual behavior before they are hospitalized. During this time, the persons about them somehow tolerate this behavior. We shall consider some of the familial and status conditions which qualify this tolerance.

Source of Data

Saint Elizabeths Hospital (the Department of Health, Education and Welfare), which cares for patients from the District of Columbia and certain other groups of the mentally ill, generously allowed the writer access to the medical records of patients.

Patients meeting the following criteria were selected for study:

1. Diagnoses: Functional psychoses only (schizophrenia, manic-depressive psychosis, involutional psychosis).

2. Age: Range 20 through 49.

3. Race and sex: White persons and Negroes, both sexes.

4. Residence: Residence in the District of Columbia for one year or more.

5. Date of admission: Admission to the hospital during the period January 1, 1953 through August 31, 1956, and no prior hospitalization in a mental institution extending beyond one month.

Patients meeting the above criteria were excluded if, within the first year of hospitalization, they were transferred to another hospital, were discharged without medical approval, or died. Prisoners against whom charges were not dropped during the first year of hospitalization were also excluded.

For the period of investigation, 582 of the just over 5,000 total admissions to the hospital were included in this study. Nearly all those studied were diagnosed as schizophrenic—just under 90 percent. Five percent had involutional and four percent manic-depressive psychosis. The median age of the group was in the early thirties. Thirteen percent were white men; 29 percent, white women; 20 percent, Negro men; and 38 percent, Negro women.

The sources of our data were: 1) medical certificates listing the person or persons who brought the patient to the hospital and reasons for commitment; 2) interviews of a hospital psychiatrist with the patient and informants who knew the patient; 3) correspondence from doctors who had treated the patient during the pre-admission period; 4) correspondence from police, military, social, and medical agencies.

Indicators of Tolerance

In what follows our major interest will be in indicators of tolerance of the future patient's unusual behavior, particularly by his immediate family (i.e. spouse, parents, sibling, or grown children).

1. *Agent of hospitalization*[1]

We coded as the agent of hospitalization the person who had arranged for the patient to be taken for mental observation directly to the mental hospital or to the psychiatric department of the city hospital from which commitment to the mental hospital occurred (see Table 1). When this action is taken by the patient's family or others, it is almost always at the point when they can no longer tolerate his behavior. In particular, public hospitalization by family members represents a surrender of their attempts to cope with him.[2]

If someone other than an immediate family member hospitalized the patient, or if the patient hospitalized himself, we assume that the immediate family members were more willing to continue to abide his behavior at the time of hospitalization, than if they themselves hospitalized him. Because of our interest in whether the immediate family

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1. Other relevant studies about the agent of hospitalization are: John A. Clausen and Marian R. Yarrow, "Paths to the Mental Hospital," *Journal of Social Issues,* XI, No. 4 (1955), 25-32; Charlotte G. Schwartz, "Perspectives on Deviance—Wives' Definitions of their Husbands' Mental Illness," *Psychiatry,* XX (August, 1957), 257-91; Harold Fröshaug and Aagot Ytrehus, "A Study of General Paresis with Special Reference to the Reasons for Admission of These Patients to the Hospital," *Acta Psychiatrica et Neurologica Scandinavica,* XXI, Fasc 1 (1956), 35-60; August B. Hollingshead and Frederick C. Redlich, *Social Class and Mental Illness,* John Wiley & Sons, New York. 1958, p. 189.

2. Similarly, it is reported "from approximately one hundred interviews with relatives of persons committed to a Midwestern state hospital that families will tolerate extreme deviation on the part of psychotic members, seeking legal commitment only with great reluctance and show of guilt after exhausting other resources." Edwin M. Lemert, "Legal Commitment and Social Control," *Sociology and Social Research,* XXX (March-April, 1946), 173.

TABLE 1

Agent of Hospitalization by
Living Arrangement, Each Race and Sex

Agent of Hospitalization	Married Patients				Unmarried Patients					
					Lived with Parents				Lived with Sibling	Lived with Adult Child
	WM %	WF %	NM %	NF %	WM %	WF %	NM %	NF %	%	%
Spouse[1]	55	69	43	73						
Parent or Sibling[1]					50	79	50	71	54	70
Police on own initiative	9	19	13	11	13	13	31	10	12	10
Court	18	0	22	2	17	0	8	10	10	10
Patient on own initiative[2]	14	8	18	9	17	4	11	5	17	10
All others	4	4	4	5	3	4	0	4	7	0
Number of Patients:	22	62	23	88	24	24	36	21	41	10

Agent of Hospitalization	Unmarried Patients (cont.)						
	Lived Alone				Lived with Children under 18	Lived with Friend	Lived with Aunt, Uncle or Cousin
	WM %	WF %	NM %	NF %	%	%	%
Parent or Sibling	44	12	5	26	22	22	37
Police on own initiative	19	28	53	52	54	54	11
Court	6	14	5	6	0	0	0
Patient on own initiative[2]	12	23	10	10	8	8	10
All others	19	23	27	6	16	16	42
Number of patients:	16	43	19	31	13	13	19

1. Includes cases in which the family called the police to take the patient to the hospital or acted on the advice of the police or others.
2. Includes cases in which the patient went to the hospital on the advice of a doctor but of his own volition.

initiated the steps to hospitalization, we coded as "family" in Table 1 cases in which the family called the police to take the patient to the psychiatric department of the city hospital or the family acted on the advice of a doctor or others.[3]

3. It might be argued that among those cases hospitalized by other than the family are some whose families arranged for someone else to hospitalize the patients. In those instances about which we had such information, this was usually a parent arranging for a sibling of the patient to take him to the hospital. For this reason, we have combined the codes "parent" and "sibling" in Table 1. Very rare were instances in which the family, as far as we know, "arranged" for the arrest of the patient or seemingly "allowed" his behavior in public so that the police might be called in.

2. *Timing*

We measured the interval from when the patient began to manifest bizarre symptoms or first seemed sharply changed from his usual self to when hospitalization occurred (see Table 4). That is, symptoms such as sleeplessness, nervousness, irritability, and physical complaints, which were reported to be the earliest manifestations of most of these illnesses, were disregarded as starting points for measuring this time interval. The point at which the patient began to manifest bizarre symptoms or first seemed sharply changed was selected, for the most part, from descriptions by those persons who had lived with him, usually members of his im-

mediate family. Therefore, it was the point from which these persons became aware of his markedly unusual behavior.

3. *Stability of living arrangement*

Our third indicator of tolerance is whether or not marital separation or, among unmarried patients, separation from the person with whom the patient had been living occurred after the onset of symptoms of mental illness (see Table 3).

Symptomatic Behavior

All the patients studied were diagnosed after hospitalization to be functionally psychotic. Psychiatrically, their symptomatic behavior was seen as delusions, hallucinations, thought dissociation, severe mood changes, and so forth. Descriptions by their families of their pre-admission behavior do not fall readily into these psychiatric categories. However, their families did recognize that the behavior was very unusual.

Symptomatic behavior was important, for if it had not appeared, these patients would not have eventually been hospitalized. However, the particular types of behavior[4] manifested during the onset of psychosis had little influence on agents or timing of hospitalization, even when other characteristics, such as education, race, sex, religion, were held constant.[5]

Patients with physical complaints were *more* likely[6] (by 16 percent) and those with symptoms of withdrawal were *less* likely (by 14 percent) to be hospitalized within two years of onset than were other patients. There was also some evidence that aggressive behavior (which was relatively infrequent) in a married female patient, coming toward the end of a long period of symptoms, led her husband to hospitalize her, whereas aggressive behavior in a married male patient led his wife to swear out a warrant, have him arrested, and then it was the court which sent him to the hospital for mental observation.[7] Otherwise, the particular types of symptoms were not relevant to the agent or timing of hospitalization (tables not presented).

Furthermore, for 65 percent of those hospitalized by their immediate families, no single precipitating behavior or incident was reported as the cause of hospitalization (table not presented). For these, at least, hospitalization was deliberate, in reaction to a series of behaviors and not to any particular incident. Even of the others, we know that many families reported an incident as the last "straw" or as an excuse for taking steps to remove the patient from the community.

For the most part, therefore, families tended to react to the *totality* of symptoms rather than to any particular type of behavior. We do not know what definitions of the patients' unusual behavior most families came to, if any.[8] The one experience common to all who have contact with psychotic patients is that their unusual behavior seems without reason and without precipitating cause. Some of the behavior may be repetitive and therefore predictable but still seems to lack reason. Probably adding to the uncertainty of social contact is that unusual behavior alternates with phases of "normal," conventionally expected behavior.

In our society there are different ways in which we deal with aggressiveness, withdrawal, suicidal tendencies, or other unusual behavior for which we think we can infer some reason. These ways differ by the sex, race, education of the person. But there seem no norms about how to deal with behavior that is not only unusual but appears to have no reason, certainly none that arises in the social relation with the person.

Familial and Status Conditions Qualifying Tolerance

From the data we shall present next, we shall infer that what seems to characterize tolerance of the future patient's unusual behavior are norms generally prevalent in our society which differentiate responsibilities by relationships. Within these relationships, further gradations of tolerance occur according to norms about how to treat persons in certain statuses, again whether they are behaving in an unusual way or not. Finally, "exposure" to the unusual behavior is relevant to tolerance.

Responsibilities by Relationship

a) *Familial*

The responsibilities in marriage and between parents and child are more pronounced than any other in our society. Our findings show that patients who were living with their spouse or parents were *more* likely hospitalized by these relatives than patients who had lived with a sibling, aunt, uncle, or

4. Codes were matched to phenomenological rather than to interpretive statements. Thus, behavior such as being up at odd hours, not washing, or lying around in bed, rather than going to work, might be interpreted as bizarre, particularly if it represented a marked change from orderliness and punctuality. However, such behavior was coded as "changes from routines." "Bizarre" behavior was coded if the informant said that the patient's ideas did not make sense, that he had acted peculiarly, that he said he heard voices, or like behavior was described. Reports of symptoms such as aggressiveness, suicidal tendencies, physical complaints, destructiveness, were probably more reliable than those of withdrawal, depression, or irritability. See Erwin L. Linn, "The Association of Pre-Admission Symptoms with the Social Background of Mental Patients," *A.M.A. Archives of General Psychiatry,* III (November, 1960), 557-562.

5. With the exception of the occupation of spouses of patients, we had no data about characteristics of persons in contact with patients. The assumption in our analysis is that Negroes lived with Negroes or associated with Negroes, that Catholic patients' families were Catholic, that the higher educated patients lived in social environments reflecting their higher education, and so forth.

6. Unless noted not to be statistically significant, all differences discussed would not have arisen by chance except in five or less percent of samples drawn from the universe.

7. Although female patients were as likely as male patients to have been physically aggressive, their husbands either felt less threatened by the behavior or at least did not see police action as a desirable way to deal with it.

8. See Charlotte G. Schwartz, *op. cit.* This was a study of wives of white patients, most of whom were also included in the study of patients being reported here.

cousin were by these relatives (see Table 1). Thus, we infer that, if the patient had lived with his spouse or parents, these persons seemed *less* likely to abide his behavior than a sibling, aunt, uncle, or cousin, if the patient had lived with them.

b) *Other than familial*

Neighbors, employers, or friends are much less responsible for their relationship to a person in our society than any relative. Our findings show that employers may have fired the patient; they were most unlikely to have hospitalized him. Neighbors occasionally hospitalized him, but more frequently attempted to get familial or police action. Friends acted when no immediate family was available. And the police hospitalized on their own initiative only when they witnessed behavior which was extreme enough to be reported as warranting this action (see Table 1; detailed data not shown).

"Independence" of Status

Within the setting of familial responsibilities, differences in statuses further qualify tolerance of the future patient's behavior.

For instance, the spouse or the parent has greater social permission to "interfere" in the life of, or to direct adult women, than adult men. In contrast, men are encouraged by their families to be independent and to take their own unguided actions. Congruent with this difference in independence is our finding of a *greater* likelihood that female patients who had lived with their spouses or parents were hospitalized by these persons, than were male patients in the same living arrangements[9] (see Table 1).

However, there are stronger social pressures to work on a man than on a woman. And we find that male patients, both married and unmarried, who had lost their jobs were more likely hospitalized by their immediate families than were those still working at the time of hospitalization (see Table 2). There was no association between employment and whether or not the immediate family hospitalized female patients (Table 2). In short, the man's loss of job was associated with increased likelihood of "interference" by his family, but the woman's loss of job was not so associated.

The parents' right to interfere and probably their feelings of responsibility are inverse to the age of their child. Although our patients were all adults, congruent with increased "independence" with increased age in our society are our findings that the time interval to hospitalization tended to be less, and the likelihood that the immediate family was the agent of hospitalization was greater, among younger than older single patients. In contrast, responsibility in marriage is not usually influenced by the age of the spouses. And age is not relevant in our data about married patients (tables not presented).

Finally, in this consideration of qualifications of tolerance by the status of the person, is our data about disruptions in marital or other living arrangements during the pre-admission period of symptoms of mental illness. The lower-educated married Negro man is often described to be of much less social or economic importance to his wife and children than the married Negro woman to her family. Our data are consistent with this description: we find that the Negro male patient's marriage was less likely[10] to be maintained after the onset of symptoms of mental illness than was the Negro female patient's (see Table 3). This difference in disruptions of marriage between Negro males and Negro females was *greater* than that to be expected in the absence of symptoms of mental illness: before the onset of symptoms, Negro males did not differ from Negro females in this respect (see Table 3). However, the evidence is not conclusive because of uncontrolled factors: e.g., length of marriage, age, or "compatibility" before the onset of mental illness.

Among the unmarried, the Negro male patient was the most likely to have been separated from the persons with whom he had been living (see Table 3) but a difference of this size might be due to chance, and we had no data about the pre-onset period with which to judge whether the difference may have occurred in the absence of symptoms of mental illness.

"Exposure"

The continuing exposure of a range of persons to the future patient's behavior may influence how long symptoms are tolerated before hospitalization occurs. We find no difference between white and Negro patients living with their immediate families in how long they manifested symptoms before hospitalization occurred. In contrast, white patients who lived with others than their immediate families, or alone, were, on the average, hospitalized more slowly than Negro patients who lived with others or alone (see Table 4).

The Negroes in our study tended to live in extended family settings—usually including a number of aunts, nieces, uncles,

9. A problem of interpretation were cases sent by the Municipal Court to the psychiatric department of the city hospital for mental observation, from which they were then committed to the mental hospital. We coded these as court cases and not family even if the family had originally called the police. Our reasoning was that jailings of some future patients by their families had happened *before* they manifested symptoms of mental illness and we were interested in distinguishing familial action specifically because of symptoms. Nevertheless, although in these cases the families had sworn out the warrant for jailing, an argument might be made that this was the only way the family knew to be rid of the patient, which they did because they could no longer abide his behavior. If we do add the court cases in which the immediate family took out the warrant to the "family" code in Table 1, our results for the unmarried remain the same. Among the married men, however, our results are now that about 60 percent were hospitalized by their wives. As a result, the difference between marrid men and women hospitalized by spouse is then within the likelihood of a chance random sampling error, although the *pattern* by sex is still the same as for unmarried patients living with parents.

Encouragement by his immediate family of the man to be independent may also explain the higher proportion of male patients than female patients going to the hospital on their own volition, if they lived with their spouse, parents, or sibling (see Table 1). These differences, however, are not statistically significant. If the pattern resulted from more self-awareness of emotional difficulties by male than female patients, and if not due to chance, we would expect a similar pattern among patients living alone, but there is no such pattern among the latter patients.

10. These were mainly Negro males of lower education. Among the 37 Negro males married at the inception of symptoms of mental illness, only eight were high school graduates or had attended college. Consequently, no reliable statements may be made about the relevance of education. However, just one of these eight separated from his spouse during the pre-admission period similarly, therefore, to the white and to the Negro female married patients. For the latter and for all unmarried patients, education was not relevant to whether there had been marital or household separations during the period of illness.

TABLE 2

Agent of Hospitalization by Employment And Marital Status, Each Race and Sex

	Married Patients						
	White Male		Negro Male		White & Negro Females		
	At Admission:		At Admission:		At Admission:		
	Emp. %	Not Emp. %	Emp. %	Not Emp. %	Emp. %	Not Emp. %	Housewife %
Spouse hospitalized the patient	36	80	43	*	84	69	71
Number of patients	11	10	14	6	19	45	75

	Unmarried Patients					
	White Male		Negro Male		White & Negro Females	
	At Admission:		At Admission:		At Admission:	
	Emp. %	Not Emp. %	Emp. %	Not Emp. %	Emp. %	Not Emp. %
Parent, sibling or adult child of patient hospitalized the patient	19	62	21	44	39	42
Number of patients	16	29	24	43	54	142

* Percent not shown because there are less than 10 cases.

cousins. The difference between white and Negro patients not living with their immediate families in how long symptoms were manifested before hospitalization occurred may reflect a greater range of persons "exposed" to the Negroes' behavior, regardless of these living arrangements, than to the behavior of white patients, whose living arrangement, as we coded it, was a more accurate description of the range of persons thus "exposed." If so, the range of persons exposed was not relevant for patients living with their immediate families.

Exposure may also account for our finding that Negroes living alone, of lower education, were the most likely of all patients to have been hospitalized by the police acting on their own initiative (see Table 1; table showing education not presented).

Summary and Conclusions

The agent of hospitalization, quickness of hospitalization, and the stability of marriage or other living arrangement of the psychotic patients we studied were associated with their race and sex. Agents and timing were qualified by patients' relationship to those with whom they lived before hospitalization. Employment was relevant for male patients, and age for single patients. Of less relevance were the particular types of symptoms manifested or education.

These data were considered to reflect tolerance[11] of very unusual behavior by the community, particularly the immediate family (i.e., spouse, parents, sibling, or adult child), according to norms generally prevalent in our society. We inferred from our findings that tolerance decreased with closer familial relationships to the future patient. Within the family setting, other general societal norms which qualified the tolerance of unusual behavior were: 1) the greater "independence" of the man as compared to the woman, 2) the lessening of the man's independence by his loss of job, 3) differences in independence of the younger as compared to the

11. Agents, timing, and separations were used as operational definitions of "tolerance." Other criteria could perhaps be used, e.g., changes in visiting patterns of the family during the pre-admission period, changes in amount of time spent with the future patient, but these are outside the range of data that could be obtained from our source, the medical records.

Also, other factors than those studied may be relevant to our indicators of tolerance, e.g., knowledge about how to hospitalize the patient, earlier emotional relations with him. We had no data about these. The first, knowledge about how to hospitalize the patient, would probably reflect education but education was not associated with the agent or timing of hospitalization. Under any circumstances, the purpose of our research was to investigate some of the factors associated with our three indicators of tolerance but, of course, not all of them.

TABLE 3

Separation From Spouse Or Other Person
With Whom Patient Had Been Living, Each Race and Sex

	Married: at Onset of Symptoms			
	White Male %	White Female %	Negro Male %	Negro Female %
A separation from spouse occurred after onset of symptoms of mental illness*	8	14	35	15
Number of patients still married at onset	25	70	35	99

*Four percent of these were reunited with their spouse before hospitalization occurred.

	Married: before Onset of Smyptoms			
	White Male %	White Female %	Negro Male %	Negro Female %
Permanent separation from spouse occurred before onset of symptoms of mental illness	11	29	36	36
Number of patients ever married*	28	98	55	154

* No patients got married after the onset of symptoms of mental illness.

	Unmarried: at Onset of Symptoms			
	White Male %	White Female %	Negro Male %	Negro Female %
Separation from relative or other person with whom the patient had been living occurred after onset of symptoms of mental illness	2	6	13	6
Number of patients unmarried at onset	46	84	55	102

older single person, and 4) the Negro man's lower social and economic position. Finally, differences in "exposure" of range of persons to the unusual behavior may have accounted for the greater probability that whites who lived with *others* than their immediate family tended to have a longer time period between onset and hospitalization than Negroes in these same living arrangements. "Exposure" may also account for why Negroes of lower education who lived alone were the most likely of all patients to have been hospitalized by the police acting on their own initiative.

In conclusion, our data may point to some of the conditions qualifying the likelihood of institutionalization of extremely deviant persons from the community. The patients studied were all found to be seriously mentally ill. Our data show that factors *extraneous* to the symptoms of psychosis affected how long patients manifested unusual behavior before hospitalization occurred and who hospitalized them. However, we can only state this with great caution, knowing nothing about equally psychotic patients still in the community or hospitalized elsewhere and what circumstances kept them from the public mental hospital we studied.

(For Table 4, see p. 98)

TABLE 4

Timing of Hospitalization By
Living Arrangement, Each Race and Sex

	Married				Unmarried			
					Lived with Parents			
	White		Negro		White		Negro	
	M %	F %	M %	F %	M %	F %	M %	F %
Hospitalized within 2 years of being changed or acting bizarre	78	79	78	87	73	75	78	83
Number of patients	23	62	23	85	22	24	36	18

	Unmarried							
	Lived Alone				Lived with Sibling		Other Unmarried	
	White		Negro		White	Negro	White	Negro
	M %	F %	M %	F %	%	%	%	%
Hospitalized within 2 years of being changed or acting bizarre	57	46	87	77	46	70	63	82
Number of patients	14	39	15	31	11	30	27	49

News and Notes

The University of Pennsylvania has available on request a Psychological Cinema Register listing films in this field in alphabetical order with subject and author indexes. Write to Audio-Visual Aids in Continuing Education, The University of Pennsylvania, University Park, Pennsylvania.

David Landy has been appointed Associate Professor of Anthropology in the Graduate School of Public Health, with a joint appointment in the Department of Anthropology at the University of Pittsburgh. He will organize a program of teaching and research in the social sciences in the various areas of public health, and plans to teach a course in primitive and folk medicine in the academic department. In the summer of 1961 he will begin research into the relationships between cultural values and personal attitudes toward work and the development of emotional disorder, for which a three-year grant has been awarded by the Office of Vocational Rehabilitation, U.S. Department of Health, Education, and Welfare.

Monographs available:

NUMBER 1 Kurt W. Back and J. Mayone Stycos, *The Survey Under Unusual Conditions: The Jamaica Human Fertility Investigation* $1.50

NUMBER 2 Martin Deutsch, *Minority Group and Class Status as Related to Social and Personality Factors in Scholastic Achievement* $1.50

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